The Builder.

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The Future of the Architectural Association.

THE meeting of the Architectural Association on Friday evening of the present week has been fixed for the discussion of the educational scheme recommended in the Report of the Special Committee appointed to inquire into the educational methods of the Association; and although this issue of the *Builder* is formally dated on the day after that, it will, of course, actually be published before the meeting, and cannot include any report of or comment on the proceedings and on the conclusions that may be arrived at. We rather desire to support beforehand the conclusions at which we hope the meeting will arrive.

The institution of examination for entry to the ranks of the Institute, and the success which has so far attended that movement, has no doubt had its influence in leading the Architectural Association to consider its position, and in suggesting the idea that the system of education by voluntary aid which has been hitherto kept up in the Association should be developed and systematised on a larger scale and with the assistance of a regular staff of salaried professors. But even without this stimulus, it is probable, as we suggested the other day, that the Association would find itself compelled before long to make some such change as that which is now suggested. Institutions which are conducted by voluntary work come naturally and almost invariably to one of two positions: either the voluntary labour flags by little and little and the institution decays; or it succeeds and enlarges its numbers and increases the complication of its working until it arrives at that stage when it is felt that the voluntary labour required to keep it going constitutes a greater task than ought fairly to be laid upon those who have their own labour to carry out for their own living. Hence voluntary effort, though it is an excellent method for the inauguration and for the earlier years of a society of this kind, must of necessity be only a temporary system: if it does not answer it comes to an end naturally; if it is successfully carried out, it creates a task beyond its own powers to cope with continuously. We look on it therefore that the Architectural Association could not in any case have avoided the critical turning-point to which it has now come, though other circumstances combine to render the present moment a peculiarly suitable one for entering on what may be called a "new series."

It was at a meeting of the General Committee of the Association held on June 21 of last year that it was resolved "that a Sub-Committee be appointed to consider what alterations, if any, in the methods and working of the Association would improve its usefulness as an educational body"; the members appointed being Messrs. Baggallay, Collard, Farrow, Fleming, Gale, Millard, Pryce, Slater, and Stokes. The first step which the Sub-Committee took was to get a formal statement from the Institute as to whether it entirely abrogated any idea of acting as a teaching body; a question, as already observed, to which they had some difficulty in obtaining a direct answer, not because there was any doubt about the matter within the ranks of the Institute, but because there seems to exist in the official regions of the Institute a certain inability or objection to give plain answers to plain questions. As we have always maintained, the Institute was never constituted to be a teaching body, and could not become one on any scale which would be worth anything, except by entire reconstruction,—including, perhaps, even the necessity of obtaining yet another charter. The position of the Association, on the other hand, is that it was originally formed as a body for mutual help and advice, which has gradually developed into a system of what may be called mutual instruction, in which the older members teach the younger ones. This system has gradually extended into a number of classes for various branches of work in connexion with architecture, and the great step now proposed is to further organise a complete system of architectural instruction on the basis of that at present carried on, but in a more regular manner and with some important additions.

The question of funds is of course at the basis of every attempt of this kind. The first thing to be done is to engage a salaried secretary. The educational scheme proposed must immensely increase the secretarial work, which is already so heavy that we have heard that those who have undertaken it as honorary officers have said that they would never have done so had they been aware of the extent of the burden they were taking on themselves. This is only one among various increased expenses which would be entailed in carrying out the new scheme; and as one method of meeting these the report proposes that the annual subscription should be raised from half a guinea to a guinea, for town members. We are told that this is regarded by a certain number of members as a weak point in the report, and one to which opposition is expected. In that case the opponents will be acting a very foolish part. They cannot expect to have increased burdens thrown on the funds of the Association without an increased revenue to meet them; and the plain fact is that although the subscription of half a guinea was a very suitable one in the early days of the Association, when it was only a handful of professional friends meeting for discussion, it is an almost ridiculous one now, considering the advantages which it opens to members,—young students especially; and even if raised, as proposed, to a guinea, it will still be a very low one for the advantages offered, and it may be safely said that very few professional societies in the kingdom, of any denomination, offer their members so good a guinea's worth. The aggregate increase to income will be very considerable, the individual burden very small. There are few members who can pay half-a-guinea who cannot pay a guinea without feeling the difference very much. The supposition is, we believe, that many old members who can no longer attend the meetings or take part in the work of the Association, but who keep up their half-guinea subscription for old friendship's sake, would withdraw it if raised. We do not believe a sufficient number would do so to make any material drawback to the increase of funds; we should imagine the majority of old members would be interested in seeing the Association entering on a wider sphere of usefulness, and that they would be desirous to assist in the movement; we therefore regard this as a groundless apprehension, and we hope to hear that the guinea subscription has been duly passed at the meeting.

Of course this extra half-guinea from town members will not suffice to pay the staff of teachers and lecturers. This it is proposed to provide for by special fees to be paid by those joining the classes (which will not be obligatory upon any member), the Association collecting the fees and paying the lecturer either a fixed salary or a fee in proportion to the number of students attending his classes. We may suggest that a combination of the two methods would be the best; a certain

fixed salary as a backbone, and an addition in proportion to the numbers who attend. If a teacher is entirely dependent on students' fees for his remuneration he is apt to get nervous and too anxious about pleasing his classes, and is too much at their mercy. If his remuneration is entirely independent of the numbers who attend, he has not sufficient direct stimulus to make the lectures interesting to his students.

The scheme proposed in the Report contemplates making the Architectural Association a completely-equipped educating body for the architectural profession. It is proposed that the scheme of instruction should be arranged with special reference to preparing students to pass the Institute Examinations, but (as the Report more than once emphatically points out) not by any means *limiting* the course of study to what is required for those examinations. The system proposed is a dual one: a system of lectures and classes on the one hand, and a studio in connexion with the Association on the other hand, at which problems of design and construction may be worked out at the drawing-board.

Two or three points on which there may be differences of opinion enter into the discussion of this suggested system. One is as to the preference to be given for teaching by lectures or by class work. The Sub-Committee issued a series of queries on this and other points to various members of the profession whose opinion they considered might be of value, and we gather from the Report that they have been to some extent guided in their conclusions by the answers to those questions. In regard to this the Report says:—

"The next points for enquiry were the desirability of teaching in classes or by lectures, and by one teacher or by a body of visitors, for each particular subject. After considering the evidence given, we are of opinion that a combination of lectures and classes is preferable to either of those methods taken singly; and also that, as a general rule, instruction in any one subject is likely to be better imparted by a single teacher; but we consider that, for advanced students, the system of Visitors is in some cases preferable."

This is, on the whole, a sound conclusion. The value of lectures consists mainly in giving a general insight into a subject, and awakening the interest of the students in it; but we do not believe that details of a subject are really well learned from lectures; a few notes as to isolated facts may be taken, but the lecturer cannot find out the special difficulties of special students as he can in a class, nor drive home special points which require further enforcing or illustrating. We are entirely in favour of a single teacher for each subject: successive "Visitors" have different views, and cannot carry out a continuous and logical system, as one man dealing with one subject can.

Another point to which the Report directs attention is as to the desirability of establishing day classes, especially at the proposed studio. The Report says:—

"We have also given our attention to the question of the establishment of day classes, recognising that there is, at present, a strong feeling amongst many, and especially the leading members of the profession, that architects should allow their pupils additional facilities for study during office hours. We feel that, if such classes were established, attendance at them would soon be accepted by the profession as part of the ordinary work of pupils. We therefore strongly recommend that classes of this description should be established as part of the work of the Association. But, as these classes could not be made a part of the regular course, at any rate at first, we suggest that they should be a repetition of the whole, or of parts of it."

In our opinion this is rather too half-hearted a suggestion. We regard it as of the highest importance that a portion of the day should be given by architects' pupils to that kind of theoretic training in classes which they cannot have in an architect's office, and that the necessity for this will have to be recognised by architects taking pupils into their offices, whether they like it or not, though we believe the best men will be willing enough to agree to it and thereby make it practically necessary for the rest to follow their example. The relegation of such classes to evening work entirely must reduce their usefulness very much, both because the student must be to some extent fatigued and less able to give his best mind to the work than in the daytime, and because the available time is so much reduced. The report suggests that twelve hours a week is as much evening work as can be reasonably expected from a student. It is quite as much, and more than will be got from many. Social engagements have some claim on a young man, and it is better for him not to be entirely cut off from them, which twelve hours a week evening work would pretty nearly do. Besides, there is the alternative of a student taking up the Association classes and studio work entirely for a time, going into office routine afterwards. We strongly advise the Association to take the bull by the horns in this matter, and to make day-work a part of their course at once. If their educational system is so organised and carried out as to be a success in itself, they will find no difficulty about the day-time work, we are convinced. Those architects who grudge it to their pupils will find public opinion, both within and without the borders of the profession, too strong for them.

In regard to the relation of the proposed educational course to the Institute Examination, it is proposed that the Association course should be so arranged that students who have passed the Preliminary Examination of the Royal Institute may be able to acquire the information necessary to pass the Intermediate Examination in the two years allowed as a minimum in the Institute programme; and the information for the Final Examination in another two years; but that any student so desiring should be able to extend his studies over a longer period.

The following table of studies for first-year students gives an idea of the manner in which it is proposed to lay out the work:—

Curriculum.

(The subjects required for the Institute examinations are printed throughout between inverted commas.)

FIRST YEAR.

Time allowed: 3 evenings of 3 hours each every week = 96 evenings in the Session (of 32 weeks) for study in this year's course.

One evening a week to be spent in attending Lectures and Classes, and two in the Studio.

Existing Classes of the A.A. embodied in Curriculum.	*Lectures and Classes to be given on 32 evenings, each Lecture or Class lasting 1½ hour.*	*Studio.*	Existing Classes of the A.A. embodied in Curriculum.
Lectures on History of Architecture.	12 Meetings. "The orders of Greek and Roman Architecture, their origin, development and applications." "The several varieties of Classic Ornament."	Geometrical drawing of ancient examples. One example, at least, to be drawn from actual measurements. (8 Meetings for criticism of drawings.)	Elem. Class of Design, Sec. I.
Lectures on Construction and Elem. Class of Construction.	16 Meetings. "The nature of Ordinary Building Materials" and "The Elementary Principles of Construction."	Elementary Construction.	Elem. Class of Construction.
	10 Meetings. "Plane Geometery applied to Actual Work:—Projection of Solids and Development of Surfaces."	Freehand drawing.	
Lectures on Theoretical and Applied Mechanics.	4 Meetings. "Elementary Physics as applicable to Building." (Mechanics.)	Plane Geometery applied to actual work.	
	6 Meetings. The Rudiments of Perspective.	Perspective.	
	4 Meetings. "Mensuration."		
	6 Meetings. Chemistry		
Lectures on Geology.	6 Meetings. Geology.	Class for Sketching and Measuring (Saturday afternoons, as at present).	Class for Measuring and Drawing.

Other subjects added in the third and fourth years are Sanitary Science, Professional practice, Graphic Statics, Elementary Natural Philosophy (including Light, Sound, Hydrostatics, Electricity, &c.).

It is represented that the sum required to provide salaries for teachers would be raised, taking the probable number of students who would avail themselves, by a fee of five guineas a year for the lectures and classes, and five guineas a year for the studio, or ten guineas a year for the whole course. Members wishing to take up one or two subjects to be charged a fee for each individual course of lectures or classes calculated at the rate of 2s. 6d. each meeting.

This is certainly a very full programme of instruction to be given for so low a scale of fees. It is recommended that the ordinary meetings, the sessional and vacation visits, the annual excursion, the *A. A. Notes*, and the "Sketch-book," should be maintained as at present. This would seem a matter of course, or the Architectural Association would cease to be itself; unless we put a query as to the maintenance of *A. A. Notes*, the special value of which we have, we fear, rather failed to appreciate. A proposal that the library should be available in the day-time is included, and of course on our principle that the whole thing ought to be started on a day-time basis, this would follow as a matter of course; but with it comes also the necessity of a salaried librarian. The alternative of an officer who would attend to the lending-libraries of both the Institute and the Association hardly recommends itself as practical: but there is another suggestion which may be made: why should not the lending-library of the Institute, which is chiefly for the good of students, be merged in that of the Association, on terms to be agreed upon between the two bodies? This would be much better than having two lending-libraries in the same building. The Institute would have the reference-library, and the Association the lending-library, and the work of each department would be better concentrated.

If this programme, or anything like it, is agreed to and fairly started, the Architectural Association will assume a very important position as the first and only Architectural College of this kingdom, and may have a very important effect on the future education of English architects. Nothing definite has as yet been formulated for enabling country members to participate in the advantages of the proposed curriculum, except that it is suggested that some portions of the class studies might be carried on by correspondence. But if the Association can carry out their spirited and ambitious programme, we should expect to find that one result would be that a good many country students, intending ultimately to start practice in their own neighbourhood, would come up to London temporarily to pursue their studies in the Architectural Association classes and studio. And this will be all the more likely to be so if the daytime work is made an integral part of the programme, so that any man coming up for this course of

study can make the most of it in a given time. The whole educational move thus proposed for the Association is a very ambitious one, but in our opinion the more ambitious it is the more likely it is to be a success, and especially if it is laid out so as to be worth the attention of country students as a centre of architectural education for the whole kingdom. It is quite possible that it may become so: nothing short of that should be the aim.

THE TEMPLE OF DESPOINA AT LYKOSURA.

NO official report of the excavations at Lykosura, save for occasional notes in the Δελτίον, has yet been published. The following account we owe to the kindness of a member of the British School of Archæology at Athens, who recently visited the site:—"The temple of Despoina at Lykosura lies high up in the mountains Tetrasi. To the north-west rises the summit of Mount Lykaion, which is connected with the earliest inhabitants of the land, and the human sacrifices to Pelasgian Zeus. High above it is the Acropolis, a mass of bare rock, with parts of its walls still preserved. The village of Stala, where the excavators lived last summer, is at some distance to the north. The road, or rather mountain path, by which one reaches the temple, passes through extraordinarily grand scenery. After the crossing of the Alpheios, which is here very shallow and not so rapid as its tributary the Helisson, it winds upwards round hills and through deep gullies furrowed out by torrents and rocky slopes. The hills are covered with oaks; the 'acorn-eating men of Arcadia' (βαλανηφάγοι Ἀρκάδες ἄνδρες) would certainly here have found abundant food to their liking. Nearly all the way up the hills are vineyards and presses, and cultivation goes on in patches between the rocks. About two hours after leaving the Alpheios one climbs up a slope, out of which trickles a fountain, and at the end of a ridge one comes upon a tree, near to which are the remains of the Chapel of St. Athanasius, which was entirely constructed out of the materials of the ancient temple. Running westward from this hill lines of foundations have been uncovered, which may be those of a stoa. Following these one reaches the Temple. It is built on a sort of platform, which was, no doubt, made, or at least widened artificially, at the side of the hill. On the north, beyond the heaps of earth thrown up by the excavators, is a steep slope downwards, and to the south the rock is seen above at a distance of about two yards from the line of wall. Immediately at the bottom is a great bank of earth. To the fall of earth from this steep slope we owe the preservation of the Damophon sculptures, to the importance of which attention has been already called in the *Builder*. At the back the rise is less steep, but just as evident. Thus there could be no question here of a peripteral temple, for there was no room.

The dimensions of the cella are but small. It consisted merely of an inner chamber with a pronaos and a row of columns in front,—*i.e.*, it is, technically, Doric hexastyle prostyle. All indications in the remains point to its being of a date not earlier than the fourth century B.C. The material is chiefly a local stone, rough in texture, blue-coloured with yellow veins. This is chiefly employed for the walls and floor. The columns, entablature and sculptures are of a marble which has a sparkling white grain, but when long exposed becomes a rich dark yellow on the surface. The temple is still only imperfectly cleared out, and heaps of earth lie about the floor, under some of which are buried the marbles that have not been yet transplanted to Athens.

Approaching from the east, one finds among the mass of materials that lie before the entrance two round bases, apparently *in situ*. Two steps lead up to the stylobate. Only two drums are still standing, *i.e.*, two at the south end, which were preserved from the seeker after building materials by the fall of earth. The drum *in situ* at the south-east corner has two others close by which have evidently fallen from it. They are Doric, and just short of a meter in diameter. The pronaos behind was paved with local stone, and contained many votive bases with inscriptions, several of which remain. A doorway leads into the cella, the transverse wall on each side remaining, but better preserved to the south than to the west. The cella was paved with big, coarse red tiles, which lie for the most part in a heap in the centre. The *bathron*, as is known from the Δελτίον, filled almost the whole of the end of the temple. There is a space of only about 2 ft. between it and the north and south walls, and behind, certainly not more than 4 ft. The shape is peculiar: a long and lofty line, with a rectangular projection in the middle of the east side. The level of this wider centre is at present higher than that of the two sides; whether this was so originally is difficult to say. The higher level would suit the two seated and superior goddesses, in the centre, while the two accessory figures, Artemis and Anytos, would stand on a lower level at the two sides. The excavators alone could judge what the original level was; but, anyhow, the rough surface of the centre must have been covered by some smoother blocks.

At a distance of about a yard in front, and parallel with the *bathron*, runs across the temple a course of narrow blocks of the local stone, much covered by the uncleared rubbish. From a hole in the middle one of three that are visible together, one could conjecture that this served to carry a metal railing, by which, as in the case of the Zeus at Olympia, the worshippers were kept at a distance from the statues. Of the back walls there is visible a course of blocks, in which the greater part of their surface has not been dressed down to the level at the joinings, and above a projecting layer.

A curious feature of the cella is that in the south wall, quite close to the *bathron*, and facing the steep rock and the mass of fallen earth are remains of what must be called a doorway, as the side blocks seem to be certainly *in situ*. Possibly the worshippers, who came in through the pronaos, made their exit by this way, and left by the narrow passage (it must have been very narrow if it existed) running along the south side. This might be an arrangement to avoid crowding on festal occasions. The temple wall seems to stand on a single step, so far as the excavations have yet made the foundation visible. Among the *débris* one finds tiles of the entablature, and a corner of the pediment with an ornamental flower pattern on the cornice; but the greater part of the building material has been carried off, and only the lucky accident of the fall of the earth from the south slope has preserved for us the statues. For the finding these every archæologist owes a deep debt of gratitude to M. Leonardos, who carried on the excavations for the Greek Government."

Examination and Registration of Plumbers.—At the examinations of plumbers for registration, held at the Guilds Institute on Saturday last, there was a very satisfactory attendance of applicants, not only from London and the suburbs, but from Kent, Essex, Oxfordshire, Hertfordshire, Suffolk, Cambridgeshire, Salop, Berkshire, and Staffordshire. The examinations were such as to test the qualifications of the applicants in both the practical and theoretical branches of their craft, each applicant being required to execute a given amount of manual work, such as joint-making, pipe-bending, lead-laying, &c., besides answering a number of questions relating to the properties and qualities of the various materials used by plumbers, external and internal construction, sanitary arrangements, and water-supply. The examiners were Messrs. John Smeaton, J. C. Ashdown, G. Davis, J. W. Clark, C. T. Millis, and R. A. Nurse,—the last representing the United Operative Plumbers Association of Great Britain and Ireland. One-fourth of the masters and two-thirds of the operatives succeeded in passing the full examinations.

METROPOLITAN BUILDING LEGISLATION.

BY A DISTRICT SURVEYOR.

BUILDING legislation for London practically dates from 19 Charles II., cap. 3, 1667, the year after the Great Fire. That great calamity was the cause of all subsequent regulations of building, and the keynote is struck in the eloquent wording of the preamble to the Act of 1667: "Forasmuch as the City of London, being the Imperial Seat of his Majesty's Kingdom, and renowned for Trade and Commerce throughout the World, by reason of a most dreadful Fire lately happening therein, was for the most part thereof burnt down and destroyed within the Compass of a few Days, and now lies buried in its own Ruins; For the speedy Restoration whereof . . . . and to the end that great and outrageous Fires (through the blessing of Almighty God), so far forth as human Providence (with Submission to the Divine Pleasure) can foresee, may be reasonably prevented and obviated for the Time to come, both by the Matter and Form of such Building; . . . . Be it therefore enacted," &c., &c.

Section IV. of this Act directs the appointment by the City of one or more Surveyors to administer the Rules and Regulations, and as Sir Christopher Wren was appointed Chief Surveyor, he may fairly be claimed to be the Father of District Surveyors.

Mr. Slater, in his interesting paper lately read before the Institute, sought to prove that the time had come for new building legislation for London; complained of the insufficiency and arbitrariness of the present Building Act of 1855, and also of the way in which it is administered; and further laid down the lines upon which a new Act should be drawn. If we are to support him in this laudable effort, let us first of all endeavour to sum up our experience gained during the last 223 years. Between the years 1667 and 1855 sixteen Building Acts have been passed, and if examined *seriatim*, it will be seen that there is a tendency throughout to eliminate all those detailed regulations which Mr. Slater now wishes to re-introduce and to amplify. The Act of 1667 regulates the formation and width of streets, the "rates" (heighths) of the building to be erected therein according to the widths of the streets, the sewerage of these streets and buildings, and finally "the proportions and scantlings for stories, walls, and timbers." Timbers here include girders, lintels, binding joists, joists, plates, and roof timbers, down to laths for plastering. This is certainly "detailed legislation."

Then follow the Acts of 1707, 1708, 1724, 1760, 1764, 1765 (two Acts, cap. 27 and cap. 37), 1772, 1774. The last-mentioned (14 Geo. III. c. 78) remained in force down to 1844. Truly the eighteenth century devoted great attention to the subject of building legislation.

In the present century we have the Act of 1844, which was in turn superseded by the Act of 1855, now in force throughout the Metropolitan area as defined by the Local Management Act of that year.

There were two unimportant Acts passed in 1810 and 1840, but they need not be further referred to here.

Now, if we turn to the Act of 1844, we find that it embraces and endeavours to legislate for nearly all the various matters referred to by Mr. Slater as subjects urgently needing legislative control at the present time. In short, the preamble of the Act of 1844 may be said to form a synopsis of Mr. Slater's legislative reforms of 1890. "The Improvement of Drainage, the Narrowness of Streets, the Ventilation of crowded Neighbourhoods, the use of Buildings unfit for Dwellings, the regulation of dangerous and noxious Manufactures, the diversity of practice among District Surveyors, making it expedient to provide them, under certain checks and control, a Discretion in the relaxation of the fixed Rules;" all these important matters the

Act of 1844 sets itself out to remedy and control with a complacent self-assurance worthy of the present young German Emperor himself.

But with what result? That in eleven years it was swept away, and the lean, abbreviated, unassuming Act of 1855 was substituted, an Act which has the air of a man who has come down in life, the dilapidated appearance of a "hanger-on" of police-courts. It is really an Act which gives just so much control over buildings as may insure a certain minimum of stability and the prevention of the spread of fire.

Mr. Slater says, "Both streets and buildings should be dealt with in one Act." This is clearly a mistake. The local management of London by its Vestries as constituted under the Act of 1855 is not perfect; but while this Vestry system exists (and it will not be lightly done away), the control of streets, with their cleansing, paving, lighting, and sewering, naturally appertains to these Vestries; they only require such general control as may insure greater uniformity of system in their respective parishes. But it may be safely said that few, if any, provincial towns are better administered than any one of the London parishes; and if the comparison is made, that none of the borough municipalities do their work so economically.

With respect to building legislation proper, it is most important, as Professor Roger Smith says, that a Building Act should be *definite* in its rules, and as these have to be generally applicable to many classes of buildings over the whole Metropolitan area of 117 square miles, it is manifestly supremely difficult to frame such detailed regulations as may be universally workable; certainly for every ounce of detail you must allow a pound of discretion in administration, otherwise another dead-lock will ensue, as previously occurred in 1850. This can be provided against by correcting the defects in the machinery provided by the Act of 1844. No one who has had experience in administering the present Building Act would care to have thrown upon him singly that invidious "discretionary power" which Mr. Slater wishes to confer upon the District Surveyor. But the Metropolis might be divided into, say, six provinces (three on the north and three on the south side of the Thames), each province having two official referees appointed to consider any Building Act applications brought before them, assisted by the Surveyor for the District in which the building is to be erected. Such a tribunal sitting once a month could rapidly and effectively decide whether and how far any owner or builder should be allowed to depart from the strict rules of the Act, a right of appeal to a higher tribunal being reserved for those who thought the matter decided against them of sufficient importance for such appeal. With these exceptions, it would be the duty of the District Surveyor to see that the precise regulations of the Act were complied with; his hands would be greatly strengthened by the simplicity thus secured, and the desideratum of greater uniformity of practice would be attained.

But no reform or extension of building legislation will be of the slightest use unless at the same time an entirely new and competent tribunal is constituted to decide Building Act cases. Only a British Parliament could seriously relegate such cases to those Gallios, the police magistrates. Some of them so dislike administering the Act that they always decide against the District Surveyor, if possible, in order to discourage him as much as they can from appearing before them. Others appear to regard a jerry-builder as they do a cabman summoned before them by the police—that is, that the defendants in both cases are to have every possible chance of a decision being given in their favour. The magistrates do not appear to realise that the District Surveyor has no personal interest whatever in the matter at issue, and only appeals to their courts as a last resource, when all other means to amend the evil complained of have failed. This is the secret of much of the diversity of practice among District Surveyors; it being frequently wiser to overlook faults here and there, than to take action before certain magistrates only to get an adverse decision; for that decision gets widely known in the particular district, discredits the Surveyor in his efforts to carry out his duties, and makes a bad precedent, of which other builders are only too ready to take advantage. The police magistrates are responsible for much of the jerry building which exists.

Two courts (one for each side of the Thames), each consisting of a barrister, assisted by two architects as assessors, sitting three days a week, could dispose, with practical and consistent decisions, of all Building Act and "Dangerous Structure" cases, and also of all the appeals upon special applications before referred to. One great advantage to the whole community of these double tribunals would be an immense saving of time; another would be the doing away with the necessity for all "By-Law" Regulations. Only those who have had experience in administering the existing By-Laws under the Amendment Act of 1878 can realise what a hopeless tangle they make, frequently rendering proceedings under them abortive, and consequently mischievous in their futile results.

The limitation of the height of buildings is a very difficult question, and will become more difficult in the future. The growth of the area of London has long been a subject of anxious consideration, and is an admitted evil. There is but one solution of the difficulty, and that consists in concentration. That solution is already being attempted by the erection of dwellings one above another over the same site; it is a necessary and economical consequence from the increased and increasing value of metropolitan land. How far, then, should Legislation interfere with this development of concentration, if one may be excused the paradox?

Sanitary experts, so called, say it is unhealthy to live in a street where the buildings are higher than the width of the roadway; but how much nervous disease and brain pressure are caused by the stampede of millions of Londoners from the suburbs to the business centres in the morning, and the stampede back again in the evening? To the true auditor of the Public Health Bill there is a debtor as well as a creditor side in this account.

The only sound basis of any limitation of height should be that of safe escape in case of fire; and it is a matter of regret that the Institute of Architects, as representing a body of scientific builders, should have supported any mere arbitrary limitation, instead of consulting together to provide that safety by scientific construction. In America, architects devote their talents and energies to the erection of buildings over 300 ft. high. Why should English architects be content to fetter their abilities by prohibitive legislation? Forth Bridges, Severn Tunnels, and Eiffel Towers would never be carried out if engineers were not animated by a much more independent spirit.

Finally, it must be borne in mind, as Professor Aitchison points out in his strong, common-sense, and practical "Remarks," that all these reforms and regulations will result in a question of "adequate rent," and that Mr. Slater's ideal London, "the best arranged, best built, most sanitary, and generally most magnificent city in the whole world," will be a luxury that will have to be paid for, like all the other good ideals of modern Socialism.

We are not, therefore, to hold our hands from reform, and join the "laissez faire" school, but we shall better adapt our means to our end, if we fully realise what that end will be.

PERCY HUNTER.

Board Schools, Harlesden.—Mr. J. Martin Brooks, of London, has been selected as architect for the new Board schools at Harlesden, in a limited competition.

NOTES.

COLONEL RICH'S report to the Board of Trade on the accident at Carlisle, along with the detailed evidence which we now have for the first time, shows how delusive in such cases are the reports of evidence as published by the newspapers. Colonel Rich's report is almost contradictory of the verdict of the coroner's jury, and no one reading the detailed evidence, and who can appreciate the points of it, will doubt that Colonel Rich's conclusion is in the main correct, though there may be room for difference of opinion on one or two points in it. The coroner's jury acquitted the driver of all blame, and only attacked the Company for having an unreliable break; and we stated that on the published evidence we could see no blame attaching to the driver. Colonel Rich concludes that the accident was the driver's fault, though he mitigates his verdict by the remark that it is calculated to puzzle a driver at a critical moment that there should be two treatments of the vacuum brake, one "simple" and one "automatic," both worked by the same lever (backwards for "simple" and forwards for "automatic"); and as it appears that the breaks have to be set on each carriage for one or the other action by previous arrangement before the train is started, the recommendation that the company should as soon as possible do away with this dual system and adopt the automatic brake only certainly comes with additional force on reading this evidence. The driver, in his anxiety to do something to stop the train, pulled back the lever, which put the steam brake on the engine and "simple vacuum" on the carriages, but as the latter were set for automatic vacuum, the only effect of this was to take all brake-power off except the guard's hand-brake. But the main point of the detailed evidence is in the fact that there is a rule (as we said there ought to be) that trains must always approach terminal stations (or those which are classified with them, of which Carlisle is one) at such speed that the train could be brought to a stand at the proper place by the ordinary hand-brakes only. The driver, according to his own evidence, tested his vacuum brake at the proper place, and finding it wanting, tried to get up a vacuum and pulled the vacuum brake about in a confused endeavour to make it do something, all which time the train was getting nearer to the point of danger with little reduction of speed; had he at once abandoned it and whistled for the hand-brakes he would, if he was at the distance from the station which he states, have pulled up with them. A still more important point brought out in Col. Rich's report is as to the possible reason for the failure of the vacuum brake to act. We now learn from the evidence that two carriages were found with the wheels heated after the collision. Col. Rich considers that the driver having shut the small ejector at Shap Summit, when the train stopped, forgot to open it again. The office of this ejector is to keep up vacuum during the journey as against unavoidable leakage, and Col. Rich believes the vacuum had leaked away so far as to let down two of the blocks on the wheels sufficiently to cause friction, but not to stop the train on a falling gradient. "When the driver tested his vacuum at Wood Bank, there would be little or none in the pipe, he would feel no further check to his train than was already applied by the leaking on," and, as before said, he took off any power of working the brake further by changing the lever to simple vacuum. There is nothing but circumstantial evidence for this view, but it accounts for the heated wheels of the two carriages mentioned, which does not seem to have been otherwise accounted for. Colonel Rich's moral as to this is that shutting off the small ejector at stations should be forbidden. It is only done, apparently, to avoid unnecessary noise from the engine while standing.

THOSE who look at the voting list for the Council of the Institute will be sufficiently surprised at one or two of the names included

in it, and there is nothing in the circular to draw attention to the fact that these persons have been forced on to the list under the powers of the by-law which admits of this kind of operation. It is for the general good, no doubt, that this power of making additions to the Council's list of nominees should exist: that it should be used to invite the suffrages of the voters for a member who has done all he can to injure the Institute, is a piece of assurance characteristic of the quarter from which it comes. It is desirable that those who wish the Institute, and the Council especially, to have the character of a society of artists and gentlemen, should not omit to record their vote for those who are likely to maintain its honour and dignity.

THE Railway Rates Inquiry is drawing to a close, the consideration of the classification being now at an end, with the exception of the hardware list. Lord Balfour and his colleague have not hesitated to state that, by taking the evidence of the traders and railway officials firsthand, they consider they have gained the necessary information far more satisfactorily than they would have done through the intervention of counsel. They have had direct evidence as to the nature of the traffic on the one hand, and the method of dealing with it on the other,—somewhat confusing at times, as we have before remarked, but still more to the point, and more intelligible perhaps, than if given under the direction of a legal prompter, with but a superficial acquaintance with the subject. Some traders have prolonged the inquiry by advancing claims which really appear preposterous. A representative of the glass trade, for instance, asked that plate-glass in 4-ton loads should be placed in Class B (which, it will be remembered, includes such traffic as pig-iron and bricks). Lord Balfour naturally asked if the objector was serious in making this proposition, receiving a reply in the affirmative. Mr. Marshall Stevens has been examined at length upon his alternative scheme of classification, and he maintains that there is no reason why one scheme only, applicable to all railways in the United Kingdom, should not be submitted to Parliament. As evidencing the altered attitude of the traders to the terminals question, it may be noted that Mr. Stevens's proposal includes maximum station terminals and maximum service terminals,—the former item having previously been strenuously resisted. Another clause in the proposal is for "maximum tolls," a term which has led to much misunderstanding in the past, and which might well be allowed to disappear from the new schedules if possible.

THE Strand Improvement Bill came before a Select Committee of the House of Commons two days last week, and also on Monday and Thursday of the present week. The main struggle is as regards the question of "betterment," that is, whether some part of the cost shall be defrayed by a rent-charge on adjoining properties in proportion as they may have benefited by the improvement. The value of this improvement the promoters intend shall be assessed by an arbitrator. It will be more fitting to delay any expression of opinion on this subject until there has been time to consider the decision of the Committee. So far as regards the actual improvement, namely, the widening of the Strand by taking away the south side of Holywell-street, there can be no difference of opinion as to its desirability.

THE Australasian colonies are not unanimous with regard to Mr. Goschen's postal-reduction scheme. The Victorian Government is willing to adopt it, and New South Wales will probably concur. New Zealand, on the other hand, declines, and South Australia appears undecided. It is understood that the subject will shortly be discussed at a meeting of representatives of the Australian colonies, when the dissentients may perhaps be induced to reconsider their decision. Mr. Henniker Heaton's latest proposal in the way of postal reform is that the hour, as well as the date and place of collection, should be stamped on all letters passing through the post-office; and a memorial for presentation to the Postmaster-General in favour of the proposal has been largely signed in the House of Commons. This has long been done in America and elsewhere, and the additional information would doubtless often prove serviceable. If the suggestion is acted upon, it is to be hoped that the figures will be clearer than the date stamps upon railway tickets frequently are. A short time ago the return half of a ticket was presented at a station on one of the southern lines which the officials refused to pass on account of the date being indistinct,—compelling the holder to pay afresh for the return journey (the amount being subsequently recovered). Passengers are familiar enough with the warning that "change must be examined before leaving the booking-office, as mistakes cannot be afterwards rectified," but it would appear to be equally necessary for them to inspect every letter and figure on their tickets.

IN the current number of the *New Review* the Earl of Meath, sometime Chairman of the Metropolitan Public Gardens Association, discourses on "Lungs for our Great Cities," giving his impressions of the principal parks in the United States which he has recently visited. American (like English) cities are suffering from the overcrowding propensities of previous landowners, and have only recently become alive to the necessity of providing adequate breathing-spaces for their teeming populations; but the manner in which our cousins across the water are proceeding with this work, now that they feel its necessity, is somewhat different from ours. To take New York as an example: in addition to its "gardenesque" Central Park, this city has recently acquired no less than five parks, of an aggregate area of nearly 4,000 acres, and at a cost of upwards of 2,000,000*l*. These are, however, outside the city, and only at the present time are efforts being put forth to obtain open spaces in the heart of the city. For this purpose the State legislature has passed an Act "for the location, construction, and improvement of additional parks in the City of New York," whereby the Board of Street Opening and Improvement is empowered to condemn property and open as many parks below One Hundred and Fifty-fifth-street as they may think best. The Board has in consequence appropriated 2,000,000*l*., to be expended during the next ten years in pulling down rookeries and "making air-holes in the crowded parts of the city." "It is to be hoped," says the Earl, "that our London County Council will take example from this energetic action on the part of New York. It would not be necessary for London to spend anything approaching the sum which New York is willing to find. There would be no necessity to pull down dwellings and purchase valuable land. Happily for London there are still over 200 disused burial-grounds closed to the public, and many neglected squares, in addition to a few spaces which are already laid out as gardens by private associations and individuals, who are desirous to extend their operations and to relieve the public of this heavy primary expense, if only the London Council will undertake to maintain the grounds thus laid out as gardens and playgrounds and open them to the public." As will be seen by our report on another page, the London County Council is now devoting itself to a consideration of this important question in its relation to the less-favoured portions of the metropolis.

WE presume Dr. Waldstein considers that he has on previous occasions sufficiently gauged the capacities of an afternoon Royal Institution audience, and that the first of his course of three lectures on "Recent Excavations in Greece," given last Saturday afternoon, was levelled for the assumed perceptions of his hearers. This, however, is rather disappointing to those who went expecting to have a concise and connected statement of the results of recent researches, and had to listen to a demonstration of the objects of archæological research, and a sketch of the career of Dr. Schliemann, and the means which he took to acquire languages and otherwise fit himself for his task, and a eulogy on his ability and energy, &c.; all of which (including the eulogy) is to be found in Dr. Schliemann's books. A Royal Institution audience ought not, at all events, to require to have it explained to them that the object of digging up ancient temples is not to secure curios for the archæologist's own collection, but for the more serious end of an addition to the general stock of artistic and historic information. The value of a lecture on such a subject should be to give a connected exposition of the facts recently brought to light, for the benefit of intelligent hearers who may have been too busy to keep an eye on all the discoveries as they turned up. No one could do this better than Dr. Waldstein, if he would kindly think it worth while.

HOW much importance is attached by the Germans to good connexion by means of waterways, and easy navigation thereon, is evident if one bears in mind that, besides the long list of smaller works which outsiders scarcely hear of, a Danube-Oder Canal is being planned; that the Rhine is not only to be connected with the river Maas and the Dortmund-Ems Canal, but also with the Elbe, which latter is to have a new connexion with the Trave; and that complicated schemes are being prepared in reference to the deepening of the Rhine and Elbe, so as to make them navigable for ships of greater tonnage. Although, of course, many a plan does not receive prompt approval at the Ministry of Public Works, which latter body has lately unofficially notified that the number of these projects which are continually being handed in for consideration is far out of proportion to the financial means of the country, there is no doubt that the greater part of the projects will be taken in hand in the course of the next few years. In fact, this extension of waterways can be safely expected, all the more so if we look at the report of the meeting of the Association for the Improvement of River and Canal Navigation in Germany,* held last month, where the president, Professor Schlichting (of the Berlin Technical College) showed that the traffic on the Oder (near Kustrin) is at present nine times greater than in 1873, on the Elbe (by Schandau) four times, and on the Rhine twice as great as on that date, 12,000,000 tons being now moved on these three rivers combined as against the 4,000,000 tons of sixteen years ago.

IN reference to the proposed building for the Prussian "Landtag," referred to on page 245 of our current volume, we are now able to state that it has been decided to erect on the sites of the present buildings of the Imperial "Reichstag" and the Prussian "Herrenhaus" two monumental buildings for each of the two "houses" (Herrenhaus and Abgeordnetenhaus) of the Landtag, and that these two buildings, each one forming a compact whole in itself, are to be connected by a third, in which room for the Chamber of Ministers will be found. It has been high time to come to some decision on the subject, considering that the project has now been some forty years under discussion, and that the plan now decided upon has for eight years been on the point of being approved of.

AT a meeting of the north-western branch of the Society of Medical Officers of Health, held in Manchester on the 9th inst., Dr. Hope, the Medical Officer of Health for Liverpool, delivered an interesting address on "Insanitary Houses and Areas, and the Methods of Dealing with them in Liverpool." The subject would be interesting enough at

* Centralverein für Hebung der Deutschen Fluss-und Kanal-Schiffahrt (some 4,000 members).

any time, but it is particularly so at a time when the London County Council has just decided to proceed on the lines adopted not very long ago by the great northern port. Such Corporations as Bolton, which have so far awakened from their lethargy as to pull down rookeries, but have not energy enough to proceed to build new and healthy houses in place of them, might well learn a lesson from Liverpool. For years the authorities of that city endeavoured to improve the sanitary condition of certain districts, and to some extent succeeded in their efforts, causing a reduction in the death-rate from 60 to 40 per 1,000; but it was felt that enough had not been done—the death-rate in these districts was still double that of the whole city. To improve further the condition of these places, two blocks of property, consisting of 650 houses, occupied by 2,537 persons, were dealt with by the Corporation. In nearly all these houses ventilation was an impossibility, and "the stagnant atmosphere was foul and noisome;" no wonder that the death-rate in these two blocks from pulmonary diseases alone equalled in ratio the death-rate of the whole city. The houses were demolished, and at a cost of 70,000*l.* the Corporation erected the Victoria Buildings to provide accommodation in their stead. "The mortality in the new buildings is about half what it was in the old." Comment is unnecessary. It is interesting to learn that during the last ten years about 2,000 insanitary houses have been demolished in Liverpool, and 600 more are now awaiting the same fate.

THE *Athenæum* contains a passing reference to the circumstance that certain petitions and fair promises will no longer avail to save the gateway of Lincoln's Inn from the untoward fate with which it was threatened a few years ago. Commenting upon the ample resources at the Benchers' disposal,—largely due, we believe, to their recent sale of Furnival's Inn, acquired, in 1547, for 120*l.*,—our contemporary says: "Lord Grimthorpe, having pretty well destroyed everything of historical interest at St. Albans, is longing to destroy some other relic of the past, and display his incompetence as an amateur architect." In this latter respect we are quite at one with the *Athenæum*. Yet the coming destruction which it laments forms, in fact, but the completion of the Benchers' scheme, already more than half accomplished, for an entire rebuilding of the various courts which composed their old chambers in Lincoln's Inn. These chambers were all soundly and solidly built, and a large quantity of oak,—no slight safeguard against fire,—was used in the building. So far as structural considerations are concerned, their removal is unnecessary.

THE walled park of 183 hectares (452 acres) at Elven and its castle in Brittany is offered for sale at a price of 300,000 francs. This well-preserved fortress stands near to Vannes, on the road to Ploermel, in the department of Morbihan, and has a high octagonal keep. It should be of some interest to our countrymen, inasmuch as it formed the prison-house for some while of Henry VII., when Earl of Richmond. Having sought refuge in France after the battle of Tewkesbury, and having been driven by a storm on to this coast, he was made captive by Duke Francis II., and, together with the Earl of Pembroke, was confined at Elven. In the neighbourhood are Auray, famed for its Champ des Martyrs, and a now vanished castle of King Arthur; Morbihan, or the little sea, by some supposed to have been the Druids' chief seat; with Locmariaker, or place of the Virgin Mary; and Carnac, renowned for its menhirs, dolmens, and other Celtic remains.

A PAMPHLET of sixty-two pages, entitled "Leaseholds and Legislation," has recently been published by Messrs. Longmans. It is a *résumé* of the interim Report of the Select Committee of the House of Commons upon Town Holdings. When that report was made we treated the matter very fully. This work is, however, not a mere *précis;* it prints arguments against the doctrine of leasehold enfranchisement. It is well and clearly written, and is worth perusal by any one who desires to get the report of the Committee in a convenient form.

THE French Exhibition at Earl's Court, Brompton (in the buildings and grounds occupied two years ago by the Italian Exhibition), is to be opened this Saturday, May 17. Judging from the appearance which the large Exhibition Gallery presented on Wednesday last, this part of the undertaking is not likely to be anything like ready on the opening day. The long gallery was almost empty on Wednesday; very few stands or show-cases were in position, and not many packing-cases containing exhibits had arrived. Two or three days may, of course, work wonders in this respect, but they will have to be wrought before the building can possibly present anything like an exhibition. In the grounds things seemed to be in a rather more forward condition. Passing out of the exhibition gallery, one finds that the first bridge on the left over the railway has been dubbed the "Pont de la Concorde," which, of course, it in no way resembles. The farther railway bridge, now called the Pont Neuf, is equally unlike its namesake. The large entertainments theatre has been covered with scene-painters' architecture, and is intended to represent a portion of the Louvre. Closely adjoining this, and heedless of Paris topography, the canvas screen which was in the Italian Exhibition occupied by a view of the Forum at Rome, is now painted with a view of the Avenue des Champs Elysées, looking towards the Arc de Triomphe, which is seen terminating the vista. The buildings devoted in the Italian Exhibition to Wine and Alimentary Products are at present empty, with the exception of canvases still in progress of being painted for some parts of the Exhibition. The exteriors of these buildings are already covered with painted screens, giving them the appearance of two sides of a quadrangle of domestic buildings, with gaily striped blinds and jalousies. According to the programme, the Fine Arts section "will be exceptionally excellent. Among the contributors will be many of the best artists in France, including such names as Gerôme, Bartholdi, Barrias, Constant, Armand-Dumaresq, Aublet, Coutan, Yon, &c., &c. The section will doubtless be the most complete and representative of French Art, and several rooms in the Exhibition will be reserved for paintings from this year's two Paris *Salons*." We will say more about the Exhibition later on if necessary. At present it does not show much indication of justifying the loud flourishes of trumpets which have heralded it. Whatever its success as an exhibition, it will no doubt be a popular place of *al fresco* resort during the coming summer months.

THE collection of paintings of animal life by Madame Ronner, at the Fine Art Society's Gallery, is a very remarkable one, as far as the paintings of cats are concerned, which form the bulk of the collection. Not only is the mere imitative work of the highest class, in regard to the rendering of the creature's outer appearance, but the artist seems to have acquired a remarkable comprehension of and power of indicating the feline character. Mr. Spielmann, in an introductory note attached to the catalogue, which has the merit of being both shorter and less pretentious than many of the similar essays which preface the Fine Art Society's catalogues, remarks on the comparatively small number of animal painters who have given attention to the cat, and accounts for it partly on the ground that the animal is much less comprehensible, in regard to its feelings and its nature, than some other animals, besides having a peculiar suddenness in its movements, which are very difficult to catch and fix in painting. There is perhaps another reason to be found, the difficulty of drawing an animal which, from the nature of its fur, is devoid of distinctly defined outline. From whatever causes it is certainly quite true that there are fewer good painters of cats than of any other civilised animal, and Mdme. Ronner's painting ought to be seen, as representing a kind of artistic excellence which is rather rare.

THE set of sketches in Egypt and elsewhere in the East, by Mr. Ernest George, in the same gallery, includes a number of architectural subjects, mostly slightly but effectively sketched. Among the best are the view of "Luxor," half buried in the accumulated sand of centuries, and with the masts of the modern ships seen in the harbour; "Karnac," with its spreading capitals and the hot purple shadows on the columns very powerfully rendered; and "El Ghoury," a mosque interior which is an admirable example of brilliant effect of colour detail conveyed without any labour of execution.

A LETTER signed by Mr. W. B. Richmond and Mr. Somers Clarke appeared in the *Times* of Friday last week, urging that Stevens's great work, the Wellington Monument, should be removed from its miserable position in the side chapel and put where it was intended to go in the nave, and completed with the equestrian statue which Stevens designed for it. We have urged this over and over again in the strongest manner, and we are glad to see any fresh attempt made to awaken public interest about it; but we imagine Messrs. Richmond and Clarke might just as well talk to the winds. It is a matter to which the English public mind is entirely dead and indifferent.

ARCHITECTURE AT THE ROYAL ACADEMY.—III.

1,740. "A Country Museum and Institute"; Mr. Gerald C. Horsley. We hope this is an executed building, or to be executed. It is a very original and picturesque design, very well suited to express the class of building named. The ground story is in plain coursed masonry, with windows introduced in a purely utilitarian manner where wanted, and a round-arched doorway in the centre; above the string is a deep band of what we presume would be coloured decoration in tiles, a large symmetrical floral design; above this niches with seated statues serve to decorate the wall space; the building is of course top-lighted. No. 1,739, a slight tinted sketch by the same architect, shows a very peculiar "rood-screen from S. Maria Maggiore, Bergamo," with a very tall slender cross and crucifix rising over the doorway, the crucifix being shaded by what looks like a piece of embroidered cloth hanging over supports on the crucifix so as to make a semicircular hood over the figure, and a long droop at each side of it.

1,741. "A Reception Room": Mr. Roland Hill. A coloured geometrical drawing showing a pleasing decorative treatment with dark woodwork and a warm tinted wall, probably intended for gold decoration; over the string-course are wall paintings in semicircular lunettes.

1,743. "Church of St. Luke, Richmond exterior"; Messrs. Goldie Child & Goldie. A modern Gothic church in Early English style, chiefly noticeable for the solid and massive treatment of the junction of tower and spire; a little heavy in effect, certainly.

1,747. "East Window of St. Hilda's, Darlington"; Mr. A. O. Hemming. A crucifixion subject filling three high and narrow lancet windows, designed in one plane and with a good effect of colour. It would have been better, however, to have avoided the repeated lines made across the three windows by the divisions of the subject by conventional clouds: the windows might have been grouped in regard to subject without being actually connected in regard to the lines of the design. It is questionable whether this should be done even across an ordinary mullion; but it certainly cannot be done with good effect across the piers dividing separate lancet lights.

1,748. "Tom Tower, Christ Church, Oxford": Mr. T. L. Worthington: an effective little bit of architectural drawing in water-colour.

1,749. "A pair of Park Gates:" Mr. George Aitchison, A.R.A. A design in wrought iron, of which we shall give an illustration shortly; there is a certain special character about it, as it is in general feeling of Renaissance type, but the large conventional leaves and the frames of the monogram panels are in a more free and less conventional style than the ordinary Renaissance leaf. The thin spirals contrast well with these broad leaves. The thin repoussé treatment of the larger details is well indicated in the drawing. We should much like, however, to take a pair of cutters and clip off the two sprays of realistic foliage in the crowning ornament of the gate. This mixing of realistic with purely conventional elements is one of the prevalent weaknesses of wrought ironwork in the present day, and we wish Professor Aitchison had avoided sanctioning it by his example.

1,751. "Royal Yacht Club House Hunter's Quay Scotland; competitive design": Messrs. John Burnett, Son & Campbell. These are two drawings in one frame, slightly but effectively sketched in brown ink on a toned paper. No plan is given, but the design is picturesque and suitable for a yacht club-house: the rounded wing, with its open gallery under the eaves of the high roof, is a good incident in the design and gives it a good deal of its special character.

1,752. 1,753. One of these is described in the catalogue as "study for a country mansion in the manner of the eighteenth century," and the other as study for the same "in the early style of the Georgian period," both by Mr. F. W. Troup: they should have had one title, for they are front and back views of the same building. They are pretty little delicately-tinted elevations, and represent with correctness and good taste what they profess to represent; but we do not think much "study" is required to produce this kind of thing.

1,755. "Towers of Ely Cathedral": A. Needham Wilson: a good little pencil sketch.

1,756. "Design for Bronze Gates and Grille": Mr. John J. Shaw. This is hung too high to be well seen, especially considering the peculiar execution of the drawing; if the author had adopted a method of drawing that would have shown the detail more completely he would probably have got a better place for his work; all that can be said, as it is, is that the general effect appears rich and suitable to the material.

1,758. "Gamekeepers' Lodge, Sidbury, Sidmouth": Mr. Walter F. Cave. An artistic monochrome sketch of a lodge which is rather too obviously intended to be "picturesque."

1,760. "Offices, Blue Hart Court": Mr. Basil Champneys. As to general treatment this is a good and suitable bit of office architecture; the drawing, evidently made in a hurry, hardly does justice to the building or the draughtsman. The windows of the several storeys are grouped under lofty wall arches, down the centre line of the piers of which are fixed the rainspouts, whether with an absolute intention to bring them into the design or not one cannot say. As such appendages are inevitable, it seems reasonable that they should be made to work into a design and not interfere with it. It is a pity that the old-fashioned and heavy brick window dressings of the Georgian era should be repeated and perpetuated as they are in this and other designs of similar proclivities. Those on the windows of the octagonal angle turret are mere excrescences, out of all proportion to the windows which they encrust.

1,764. "Design for Stained Glass": Mr. G. Parlby. A triplet design with an angel in the centre compartment and a seraph in each of the side ones, which claims notice for its fine colour effect as well as a certain originality of conception in the subject. The architectural canopies are however much too heavy and solid in effect for stained-glass design, and seem to crush the other portion; at least this is the effect in the drawing.

1,766. "Design for Courts of Justice, York": Mr. Henry T. Hare. This is a well-executed water-colour drawing, and a design suitable enough in general style for Courts of Justice for a moderate-sized town. It is Elizabethan in general feeling, but with some originality of treatment; there are two projecting wings with a recessed centre kept lower, and occupied on either side of the door by two very large mullioned windows which contribute more than anything else to the character of the design. The balustrade line is broken by what the French call a *fronton*, a convenient word (as the French have applied it at least) for which we have no precise equivalent in English. The use of a bright blue in the shadows is intended to give a sunny effect to the drawing, we presume, but it is overdone and has rather a tricky effect, nor is there any obvious reason why some shadows should be treated this way and others not.

1,770. "Selby Abbey, from the South-east": Mr. Arnold Mitchell. This is the drawing from which the view of Selby Abbey in the New Year's number of the *Builder* was published; it is a style cleverly contrived, and which its author may be said to have invented, for suggesting a great deal of effect and contrast without heavy tinting. The wall colouring and surface are conveyed to the eye by elaborate "jointing" without interfering otherwise with the original surface of the paper, except at the upper portion of the building, where a slight Indian-ink brush tint gives the required dark effect against the sky, and enables the artist again to leave the lead roof an expanse of white, its construction only indicated by two or three lines suggesting the rolls. The ground in front of the building again is simply an exposure of white paper, contrasting with the jointed surface of the walls. A few darks touched here and there on the windows and elsewhere complete the scheme. There is a great deal of charm in this "harmony in grey and white," and a delicate sense of "values" is required to carry it out with effect; but it must be remembered that the result after all is a sketch rather than a picture, though of a highly artistic character.

1772. "Buller's Wood Chislehurst": Mr. Ernest Newton. One ought to have a plan to appreciate this drawing, which merely represents a part of the garden side (apparently) of a house, with no indication of the meaning of the drawing. It is a remarkably good specimen of picturesque effect produced in pen line, accompanied by an apparently studious avoidance of anything that can be called architectural detail. There is no doubt a reticence in this which is expressive of home-like repose and is in good taste in a negative sense; it is a fancy with a certain school of architects at present to design houses with a studious avoidance of design, and this very negative quality gives such designs a certain recognisable and individual stamp of their own; but we regard this as little more than fancy of the moment. Those who do this will soon get tired of it, and will find out that architecture means architectural design after all, and not square chimney stacks with no finish to them.

1,774. "New Staircase, Remishaw Hall, Derbyshire": Mr. F. Moore Simpson. There appears to be some nice detail about the wall treatment of the staircase; at least the effect at a distance is good: but it is too high to be seen.

1,776. "Wrexham Church Tower": Mr. Arnold Mitchell. This is another example of admirably artistic sketching on the same principle as illustrated in the drawing of Selby Abbey, but in this case in pen line; the upper part of the tower is a little more worked upon and shaded than the rest, which is reduced nearly to an outline drawing, white against a shaded sky giving background to it. As a pictorial effect this is admirable in proportion to the means employed to give it, but the drawback is that it does not really represent the effect and expression of the tower, which is in fact a dark weather-stained mass of masonry. We also regret, in architectural drawing, the revival by so good an artist as Mr. Mitchell of the system of representing, for instance, the inner angle formed by the junction of wall and buttress by a strongly-marked vertical line drawn with a ruler. There is no "line" at such a point of junction of two planes; during the last few years the convention of representing it by a line had been tacitly abandoned by the best architectural draughtsmen, and it is a pity it should be revived.

1,778. "20, James-street Buckingham Gate:" Mr. R. T. Blomfield. This is a small coloured perspective signed "invt. et delt." by the architect, with a great deal of character about it both as a design and as a drawing. It is a vertical strip of London street house architecture, with a small plan in the corner; the whole is in bright red brick, which has been shown by patiently spotting on each brick with the brush, leaving whites between, instead of the easier but more mechanical process of showing the pointing by lines in opaque white. The result is to give a special character and texture to the drawing, every part of which, the touching of the windows, the tone of the sky, shows a feeling for colour which makes the drawing a very complete whole, with a distinct effect of its own. The design is simple enough, and includes little ornament except a broad band of carved brick across the front about the springing of the stepped gable: the walls are relieved by courses of light-coloured stone, and the entrance treated as a segmental arch with alternating brick and stone voussoirs. The house is set back a little from the street line, and one wall brought somewhat forward as a buttress; the front space is enclosed by some delicate wrought-iron railing. The whole is thoroughly artistic in feeling, though we do not see the logic, architecturally, of stopping the band of ornament by little engaged brick columns on brackets, which carry nothing.

FURTHER NOTES ON ACADEMY PICTURES.

A PROMINENT place in Gallery I. is assigned to Mr. Kennington's "Homeless" (24), in which the painter repeats the same class of subject as that with which he made such a success last year. This is a life-size painting of a poor outcast child apparently found fainting on the pavement of a London street by a benevolent woman. It is a pathetic picture in expression, rather marred by the prevalent dull grey tone which seems to pervade everything in the picture, and gives it a somewhat unreal effect. Among the noticeable pictures in this room is Mr. Wyllie's "Davy Jones's Locker" (81), a painting of seaweed and a big rusty anchor at the bottom of the sea, said to have been studied from the glass window of a diving-bell, a characteristic example of the trouble which painters will take nowadays in search of a new motive for a painting and in the effort to render the subject with fidelity. The fish, which are admirably painted, seem almost to glide through the water as one looks: the effort is a complete success in its way. Mr. David Murray's "The White Mill" (43) is a fine and truthful piece of landscape-painting, except in one odd oversight; the sails of the mill are so long that they would dig into the ground in turning, or rather could not possibly turn. A much finer landscape is Mr. Macartney's "Moorland" (57), a picture in broad and grand style. Mr. Ouless's portrait of the "Mayor of Bradford" (74) in his robes is an exceptionally fine specimen of what may be called the class of official portrait. Mr. Seymour Lucas shows both very fine colour and a good deal of humour in "The Loving Cup" (4), a picture in which some seated figures at a table look on with various shades of satirical expression at the exchange of the cup between two be-robed standing figures in the centre, whose "love" appears to be of a purely ceremonial cast; the principal figure is effectively relieved against a panel of crimson cloth behind the chair. Mrs. Merritt's "Love Locked Out" (32), a not very ideal Cupid leaning against a gilded door, seems to be partly suggested, in motive and scheme of colour, by some of Mr. Watts's recent Cupid pictures. A good little nude study by Mr. Godward, "A Pompeian Bath" (42) is to be noted in a corner of the room. What induced the Academy to purchase under the Chantry bequest Mr. Macbeth's painting of "The Cast Shoe" (19) we cannot understand.

Mr. Nettleship has hardly added to his reputation by his sensational and improbable picture "The Abyss" (110), an antelope leaping into a chasm with a lion perched on his back. It is impossible the animal could have taken a leap with such a savage burden on him, and we surmise that lions know better how to take care of themselves than to let their natural prey pitch them down a precipice. Mr. Abbey's "Mayday Morning" (109) appears to be a joke, and one not worth the canvas expended on it. Mr. Adrian Stokes's "Off St. Ives" (137) is to some extent a repetition of his study of breaking waves in the New Gallery, with some fishing craft added; it is a good picture, but not equal in sentiment to his beautiful work last year, the "Harbour Bar." Mr. Stokes, however, can paint sea, which cannot be affirmed of Mr. Leader, whose "Sandy Margin of the Sea" (131) is admirable as far as the study of sandhills is concerned, but very bad in the sea, which is hard and steely. Mr. F. D.

Millet's interior "How the Gossip Grew" (151) is one of his admirably-painted scenes of furniture and figures of the Georgian era; a picture totally devoid of sentiment or true pictorial effect, but which makes its mark from the thoroughness with which all the details and costumes are studied. Mr. J. Farquharson, a painter of very versatile abilities, shows himself this year as a painter of Egyptian architectural remains, "Luxor" (115) and "Karnac" (177). Among the portraits in this room is an admirable bust portrait of Mr. E. A. Waterlow, by Mr. Alma Tadema; Mr. Richmond's portrait of the present Bishop of Durham (124) is also a success among the portraits of the year.

Mr. Watts's child portrait, "Hester Fraser Tytler" (196), in Gallery III. can hardly be called a satisfactory example of his work; a little girl with very pink cheeks and hands that seem made of wool; it is eccentric altogether both in texture and colour. Mr. Briton Riviere sends a very clever little character picture under the title "Rus in Urbe" (224), a country lad with his collie seated at a street doorway, the dog desperately excited, apparently, at the sights and sounds of the street, the lad looking puzzled and *distrait*. Mr. H. W. B. Davis's "Picardy Dunes" (242), a study of sheep in a barren undulating sandy waste, is the best work he exhibits this year, and particularly fine in colour. "The Birth of a Titan" (265), by Mr. Wyllie—a large ship just launched; and "A Glimpse of Loch Katrine" and "Old Sherwood" (271, 279), both by Mr. MacWhirter, are among the small things in this room to be noticed, as also Mr. Woods's bright and effective Venetian scene, "La Promessa Sposa" (278). Mr. Burgess and Mr. Orchardson exhibit their diploma works, the former a very clever study of two priests under the title "The Freedom of the Press" (337), at which the holy fathers are much scandalised; the latter a rather washed-out looking painting of a figure of a girl walking in a breeze on "The North Foreland" (338), a picture certainly not exhibiting the artist at his best; but, as we have previously had occasion to remark, artists know better generally than to throw away their best efforts on a diploma picture. Mr. Calderon's "Hagar" (327) is a somewhat stagey-looking woman backed by a "practicable" rock also suggesting the theatre. Mr. Pettie repeats his "motive" of two or three gaily-dressed young people flaunting along a country road, under the title "The World Went Very Well Then" (302) a title the significance of which in relation to the painting is not in any sense very obvious.

Mr. Sauber's large painting "The Golden Lure" (202), a life-size nude figure, representing Ambition, borne upon what we find from the quotation is meant for a huge bubble, is a painting of the *Salon* type, effective in a sense, but by no means rising to the height of the subject. Passing to Gallery IV., we find among the most successful pictures there Mr. Calderon's portrait under the title "Lady Betty," a seated half-length of a fine young woman with the clear complexion of perfect health well represented in the face; she has fiery red hair which forms an element of colour in the picture, and a grey-furred crimson cloak; the rings on her finger, minutely shown, form a little point in the scheme; she turns round in her chair with an attitude and expression of distinction. This latter quality should go for something in painting a lady, though Mr. Sargent thinks otherwise, for in his "Portrait of a Lady" (421), so-called, he seems to have studied to avoid every appearance of dignity or refinement, to have given her face a vulgar smirk and her hands a vulgar action, bunching up in them a part of her voluminous skirt. The picture is a kind of advertisement to any lady who values a reputation for refined and ladylike manner not to allow Mr. Sargent to paint her portrait. Mr. Jacomb Hood's portrait of Miss Shaw-Lefevre is refined in pose and expression but rather dingy in colour. Mr. Herkomer has rather a sensational kind of portrait of "Mrs Arthur Sassoon" (411) in a light dress, relieved against the dark, nearly black, shadow in a doorway, the architectural framework of which forms a kind of contrast of parallel vertical lines against the undulating lines of the figure. Among minor pictures in this room may be noticed "Sea Breezes" (360) by Mr. J. Olsson, a coast scene full of light and wind, only the breaking waves are not drawn at all, merely a shapeless collection of foam; "A Summer Shower" (345) by Mr. John Brett, one of his smaller contributions; Mr. Boughton's "Puritans' First Winter in New England: Watching for the *Fortune* Relief Ship" (396)—the pale pretty girl in Puritan costume whom we know so well may watch in vain, for no ship will sail over the sea as painted by Mr. Boughton; "Forth Comes the Moon" (410) by Mr. Walter F. Stocks, a pretty landscape of the romantic order; "The Haven under the Hill" (420) by Mr. Sidney S. Morrish, and "The Old Farm" (429) by Miss Florence A. Saltmer, a small landscape with a great deal of merit.

Gallery V. includes a remarkable little work by Mr. Swan, "The Piping Fisher-boy" (465), a small nude figure of a boy lying face downwards on a rock piping to fishes in the water. There is a mingling of poetic fancy with fine execution of the figure in this little work, which gives it a peculiar interest. Mr. Leader's "Where Sea and River Meet" (458) is again a good study of sandy foreground and vegetation with a very bad sea; Mr. Leader has not a notion of painting the sea, and had better leave it alone. Mr. Brett's "Echoes of a Far-off Storm" (472) is his principal picture this year, and is in his best style of realism, but it is so nearly a repetition of the effect and composition of a painting exhibited there a few years ago that we at first regarded it as an instance of a work re-exhibited. The title accounts for the combination of a certain amount of surf on the beach and the rocks with perfect calm in the water in the shallow pools on the shore; the sky shows an indistinct line of darker tone among the clouds near the horizon, which we presume is also an indication of the distant storm; is that effect taken from nature? It does not give us that impression. Mr. Albert Moore's "A Summer Night" (487) is one of the largest and most elaborate of his paintings of women who have nothing to do but look decorative; we look from a terrace under a verandah festooned with yellow flowerets, on to a twilight sea; three or four women, half nude, half draped in saffron drapery, recline or sit in indolent attitudes on couches with a delicately designed stuff; it is very harmonious in its way, but totally devoid of intellectual interest. "Mrs. McCorquodale and Children" (486) by Mr. Long, is a lifesize portrait group with a great deal of bright colour, harmonious in general combination, hard in texture. Mr. Brett's "Harlyn Bay" (513) is one of those brightly-lighted warm scenes of summer sea which suggest the desire to bathe, but the possibility of doing so is perhaps even more strongly suggested by Mr. Hugh Wilkinson's "Calm day on the Coast, North Wales" (514) which hangs next to it, showing an inlet or small bay flanked by dark rocks and with a shingle beach as foreground; this is a piece of realistic painting so successful as to make one look out for what its author may produce in future. Mr. Knight's "Lengthening Shadows" (517), Mr. Herkomer's portrait of "Miss Vlasto" (502), and Mr. Sant's "Oliver Twist Walking to London" (507) are among the contents of this room; the latter a picture of considerable pathos, though unsatisfactory in colour.

In Gallery VI. is Mr. Moore's "Storm Brewing" (544), not so entirely fine as his other work of this year before mentioned, and considering there is a storm brewing the vessel in the distance seems to be carrying all canvas in a somewhat rash manner. This has for pendant a curious picture by Mr. Nowell of "Lucerne" (554), with strawberry-ice clouds which spoil what might otherwise be a good landscape. Mr. White's "Ups and Downs" (581) a subject of children see-sawing, is redeemed from commonplace as an attempt to paint the effect of an endless expanse of shingle beach, which we do not remember to have seen treated before in painting. Mr. Musgrave's "Summer Seas, Cornwall" (619) is a clever echo of Mr. J. C. Hook; Mr. Meyerheim's "A Bright Day in February" (630) is one of his usual wooded scenes with cattle in a rather conventional but very pretty style; Mr. Cadogan's "Loch of the Lowes, Dunkeld" (636) seems to have been suggested by Sir John Millais' treatment of forest land in "Murthly Moss"; Mr. Cotman's "Where the Stour and Avon meet" (644) is a rather hard but presentable painting of Christ Church, Hants; and in "Benighted" (645) Mr. F. Frolich has realised a remarkable effect of moonlight.

In Gallery No. VII. Mr. Sargent again does his best to make his sitter ridiculous in his portrait of "Mrs. K." (652); we presume there are some sitters who like being made guys of; it is a taste which will probably not last very long. This room contains a grand mountain landscape by Mr. Johnson, "The last light" (687); a great rounded mountain, purple in the distance, shuts off most of the sky, leaving only a bright windy opening between its shoulder and the dark clouds; in the middle distance a lower hill catches a strong light. This is painted in a broad and grand style, and in both style and sentiment is one of the finest landscapes in the Exhibition. Mr. Macwhirter exhibits a large and spacious-looking view of "Mount Etna from the Greek Theatre Taormiva" (708). Among other landscapes, Mr. Langlands's "Golden Autumn" (701) is a good painting, but not golden by any means in its effect—dingy autumn, rather; and Mr. Parsons's "A Bend of the Avon" (715) is an exquisite bit of river scenery. Popular subjects are represented in this Gallery by Mr. Dudley Hardy's "The Dock Strike" (671), a grey uninviting-looking picture; and Mr. Geoffroy's "Un lavabo" (678) in a little boy's school, apparently a work with some character and humour, but too high to be well seen.

In Gallery VIII. we may notice "Love's Stratagem" (743) by Mr. Heywood Hardy as a good painting of horses and riders, and Mr. Noble's "By the Linn Pool" (759) as a rather powerful landscape in a very conventional style, an example of the old-fashioned practice of picture-making, rather than a representation of nature; but good of its kind. Mr. Seymour Lucas's "Mrs. Edward Greaves (800) is a very pleasing portrait of the realistic order, bright in colour, expressive in feature, and very happily posed in its graceful slanting lines of composition. In Gallery IX., devoted as usual to rather small pictures, we find Mr. Tadema's beautiful interior with a portrait figure of "Mrs. Ralph Sneyd" (900). Mr. Tadema has been trying the same experiment here which he tried so successfully in the background of a picture in the New Gallery, of repeating the same colour in decorative detail and in flowers adjoining it; in this case the elements are the red glass in the window and a group of red flowers closely adjoining it. Mr. Brett's "Mist off the Sea" (962), a comparatively small work, is one of the best of his contributions of this year.

In Gallery X. it must be extremely instructive to foreign artists who are visiting the Gallery to notice the place of honour assigned to such a piece of rampant absurdity as Mr. Sidney Cooper's "Casualties in the Hunting Field" (1,004). Mr. Hacker's "Væ Victis! Sack of Morocco by the Almohades" (1,005), is merely an excuse for drawing a number of semi-nude figures lying about the floor in theatrical confusion: a scene totally unreal and only looking like a stage effect in a melodrama. Mr. Blake Wirgman's portrait of "Sir James Hannen" (1,066) is one of the best portraits of the year in character and execution.

In Gallery XI. Mr. H. S. Tuke's "Perseus and Andromeda" (1,076) is another instance of the ridiculous manner in which painters will reduce a poetic legend to the most ordinary prose. This is nothing but a couple of life studies of figures with most commonplace physiognomy, worked up with the necessary accessaries and given a fine name. A pretty portrait of "Miss Ness" (1,085), by Mr. Walter Horsley, and a landscape by Mr. M'Lachlan, "The Last of the Light" (1,086), should be looked at, and we pass on to an admirable landscape by Mr. David Murray, one of the best things of the year in landscape, "The Young Wheat" (1,090). This is a wide expanse of field coloured by the green shoots, and a wide expanse of sky above it, with a belt of low hilly landscape in the distance dividing them. This is a really fine work, true in effect and with that unity of feeling about it which makes a real picture in the true sense of the word. Mr. Simmons's "John Anderson my Joe" (1,089) is at least a bold and original treatment of the subject, representing a man in a waterproof pilot coat kissing his wife; his back being turned to the spectator, neither of the faces are seen, yet the sentiment intended is well conveyed. "La Coupée, Serk" (1,092) is a good landscape by Mr. W. A. Toplis. Mr. Joseph Clark's one contribution to the exhibition, "The Cup that Cheers" (1,117), representing three old dames at tea, is not one of his best works, and perhaps its place in the hanging is intended as a gentle hint to this effect. Mr. Clark's best power lies in the painting of children and young people of the rustic type; at

all events this picture is the least interesting of his that we have seen. Mr. Jacomb Hood's rather large painting of "The Witch's Dance" (1,166) represents a naked witch standing in the centre of a rock from which fire issues, with a dance of draped figures round her; the central figure is fine and well studied, and one or two of the others are remarkable in their expression, but regarded as what it is intended for, a piece of "devilry," it is on the whole somewhat tame.

Of the Academy sculpture of the year we will say something on another occasion.

CLAIMS ON COVENANTS TO REPAIR.

SIR,—In your issue of May 10 you published a note relative to a recent decision of the Court of Appeal as to the meaning of the words "tenantable repair." I enclose in connexion with this subject some correspondence of interest to many of your readers. It illustrates a very common practice in London,—namely, that of a demand by landlords at the end of a lease for a larger sum for dilapidations than is justly due to them. The object of the landlord is not only to obtain as much money from an outgoing tenant as it will cost him to put a house in repair, but to obtain a sum over and above that amount, which balance goes into his pocket as cash. This is a thoroughly dishonest and reprehensible practice, but it is one often successful, because many tenants scarcely know their legal liability, or are so unbusinesslike that they are altogether in the hands of a landlord who is in the habit of making money when leases fall in. It will be observed also that in the present case a demand was made by the landlord for loss of use of the premises whilst the house was being redecorated. This is a demand for which in nine cases out of ten there is absolutely no foundation. There is no legal authority of any weight in support of it. The case of Woods *v.* Pope, which is relied on by some writers, occurred so long ago as 1835. It was in the first instance a case heard by a jury, and when the plaintiff's counsel mentioned this point the judge merely remarked that it was a new one, but that he should leave it to the jury to decide. A new trial was moved for, but was refused because the verdict was for less than 20*l.*, and because the Court were disinclined to question a decision of the jury on a matter left to them as a question of fact. There is really no sound legal ground for this contention as a general rule, though cases may occur, as where a tenant is actually prevented from entering by workmen being in possession of a house, in which some damages in respect of loss of rent would be fairly due.

In the present instance the house was surveyed before it was quitted by the tenant (C. D.), and the amount at which the tenant's surveyor placed the necessary cost of repairs to be done well was 115*l.* The landlord (A. B.) was not aware of the amount at which the tenant's surveyor had arrived, and on the expiration of the lease sent in a demand for 169*l.* for dilapidations, and 10*l.* 10s. for loss of rent during the time which would be occupied by the repairs. This latter charge was purely arbitrary, since the repairs when the demand for dilapidations had been sent in had not even been begun. It well exemplifies the absolutely illegal manner in which such claims are made. To this demand the tenant replied by sending a cheque for 104*l.* 17s. 6d. for dilapidations, and refusing to pay the sum demanded for loss of rent. To this the landlord A. B. replied as follows:—

"April 12, 1890.

DEAR SIR,—I have to acknowledge the receipt of your letter, enclosing an order for 104*l.* 17s. 6d., and, in reply, I have to say that I cannot accept this sum in payment for dilapidations at ————, as it will not suffice to carry out the necessary works. I will, however, make you an offer (but it must be without prejudice to my legal rights), to accept the sum of 140*l.* as mitigated damages, and I still claim the sum of 10*l.* 10s. for loss of use of the premises while the repairs are being executed (see Fletcher on Dilapidation, page 59). If you are not inclined to adopt this conditional proposal, I must ask you to appoint a properly-qualified person to meet my nominee, Mr. ——, to go into the matter in the usual way. I herewith return your order, and am, yours faithfully, A. B."

The reply of the tenant was as follows:—

"April 15, 1890.

DEAR SIR,—I was not in town yesterday, and your letter of 12th inst. therefore did not come to hand till this morning. As regards your claim for rent, I must repeat it is inadmissible. 'Fletcher on Dilapidations' is no binding authority. In each case an actual loss of a tenant's rent must be proved. In the present case no such loss can be proved; therefore the claim is invalid.

As regards the claim for dilapidations, I should be willing, for the sake of ending the matter, at once to pay you 10*l.* more,—viz., 115*l.*,—and will forward cheque for that sum should you accept this offer. If you are not willing to accept this sum, the matter must take its course, and your claim must be investigated by an official referee.—I am, yours faithfully, C. D."

The landlord's reply was prompt, and was as follows:—

"April 16, 1890.

DEAR SIR,—If you will send me an order, 115*l.*, as named in yours of yesterday, I will accept it, so as to settle the matter at once, although it will not pay the cost of my loss (!).—Yours faithfully, A. B."

This correspondence really requires no further comment; leaving the claim for rent out of notice, the landlord accepted as nearly as possible two-thirds of the sum claimed by him in the first instance. Dropping down 29*l.* at the first resistance, as soon as the official referee is mentioned, he comes down another 25*l.* without any resistance whatever—merely stating, for the sake of decency, that it would not cover his loss. To use the right word, such attempts to obtain money are dishonest, and it is to be regretted that many builders and surveyors are parties to such attempts—swelling out claims simply to give their employers plunder of this kind.

LEX.

THE LAST OF OLD-SQUARE, LINCOLN'S INN.

HENRY DE LACY, the redoubtable Earl of Lincoln, died on February 5, 1311, and was buried in the St. Dunstan's Chapel, St. Paul's Cathedral, beneath the tomb which Dugdale and Weever describe. The gateway of what had been his town house in Chancery-lane, and wherein he died, was begun in 1507, by Sir Thomas Lovel, K.G., who had received the honour of Knight-banneret on the battlefield at Stoke. He became a great benefactor to an Inn of Court which, in the course of various changes, had been established here on the properties of the Bishops of Chichester and of the Earl of Lincoln. The bishops owned an estate here from the time of Ralph Nevil, in the reign of Henry III, to about 1540. Chichesterrents and Bishop's-court, on the western side of Chancery-lane, survive to this day.

Lovel built his gate-house with bricks and tiles made of clay taken from the adjoining Coneygarth, or William Cotterell's garden. It has no compeers in London save Cardinal Morton's at Lambeth, and those of St. James's Palace, the Charterhouse, and St. John's, Clerkenwell. In a "Note" of our current issue we advert to the proposed demolition of this gateway, and of some adjacent buildings of the Inn, now styled Old-buildings, or Old-square, but formerly known, in their entirety, by the names of Gatehouse, Dial, Kitchen-garden, and Garden Courts.

From a privately-printed, but incompleted, volume (1849), being an edition of William Melmoth's "Great Importance of a Religious Life," which Walpole wrongly ascribes to John Perceval, first Earl of Egmont, we extract the following particulars as to the dates of these buildings.* The kitchen (since converted into chambers), south of the old Hall, was built in the year 1557; twenty-five years later were erected some chambers over the kitchen, and over the passage which leads out of Kitchen-garden-court into Gatehouse-court. In 1602-3 Chancery Lane-row, north and south of the gate, was pulled down and rebuilt; extending respectively to the houses of Sir John Tyndall, Knight, and John Bevington. In 1608 it was ordered that the Long Gallery towards Bevington's house, and the Short Gallery, be rebuilt, as also what is now the southern side, Nos. 21-3, of Old-square. In 1609, Chancery Lane-row was to be extended by twenty chambers, having three stories above the ground floor, on a return (Nos. 7-9) facing the northern side of the chapel; and in the next year it was ordered that a third uniform block of sixteen chambers (Nos. 10-3, Dial-court) be made next westwards of the chapel.

In 1614 the "House" was to be divided into the four divisions, or courts, whose names we have already mentioned; and in 1618 it was ordered that the chapel, its "fit model" having been committed to Inigo Jones, should stand in the "east" court. The new chapel was ready for opening on Ascension Day, 1623, a faculty having been obtained by Mr. Noy for pulling down the old one. Noy was a Master of the Bench, and the order for the faculty bears date June 19, 1623. This seems to determine certain doubts as to whether Inigo Jones's fabric occupies, or not, he site of the former chapel.

Of these chambers the greater portion, being Nos. 2 to 15, have been severally demolished within the past ten years. Some of them are replaced by two of the new blocks, erected between 1882 and 1887, after the designs of the late Sir G. G. Scott. Dial-court, including N 13, together with the Council Chamber, that stood against the western wall of the chapel, was removed in the autumn of 1881, for the lengthening by one bay, westwards, or 21 ft. internally, of the chapel. In the ceiling of a room at No. 13, lay an oaken beam bearing the initials "T. S." [Thomas Sanderson], with motto and date "Sans Dieu Rien, 1596." At No. 13, too, on the second and third floors, Thurloe, Solicitor-General to Charles I., and Lord Chief justice of the Common Pleas, had chambers. It was in Dial-court, and not, as is commonly supposed, at his other chambers in this Inn—now No. 24, Old-square—that were accidentally found, in the garret-ceiling, the mass of papers which Lord Somers caused to be bound in folio volumes, and which Thomas Birch edited in 1742.

Thus has it come about that of the original sets of chambers only Nos. 1 and 26, both in the gate, and Nos. 16 to 25, south of the (old) hall, now stand. The square-headed doorways, the exterior chimneys of "stock" brick, and most of the casements are comparatively modern. But a few lattices yet remain, and at No. 24 (tower staircase) and in the Chancery-lane front may be seen three or four of the mullioned windows. From some valuable particulars about the history of the "Thurloe" chambers, contained in an article by Mr. A. C. Ranyard in the *Athenæum* of January 22, 1887, we learn that an early record of the use of distinguishing numbers for the staircases is furnished by an entry in the Lincoln's Inn manuscript "Red Books." The entry relates to the "admittance of a Mr. Hungerford to 'two chambers in Gatehouse-court and Chancery Lane-row, number (1).'" This was in the year 1715. "No. 26" is cited under the year 1720; so we may conclude that by the latter date, which is several years anterior to the general adoption in London of numbers for postal purposes, all the staircases bore the same numbers as they bear still, or did bear until, as we have shown, some of them were rebuilt. At his chambers in No. 1 staircase in the gate-house, William Murray, afterwards Lord Mansfield, began practice, removing hence, as Pope's couplet reminds us, to No. 5, King's Bench Walk, Inner Temple. Lord Hatherley, when Mr. Page Wood, had chambers at No. 25, and the late Mr. Tupper occupied a set in No. 21 soon after he was called, and during the time he wrote Part I. of his "Proverbial Philosophy." The "Thurloe" chambers are on the ground-floor of No. 24, looking out into Chancery-lane. Sir Matthew Hale tenanted the chambers over the central arch of the gateway, having previously lived in Garden-court. Mr. Spencer Perceval, who was treasurer in 1803, being then Attorney-General, had occupied chambers in Nos. 20 and 25. Amongst other celebrated men who are known to have resided here, we should not omit to mention Prynne, Speaker Lenthall, and Wentworth. Thurloe went from No. 24 to No. 13 in November, 1659, and, it seems, continued there up to the day of his death. His gravestone, beneath the chapel, was inscribed:—"Here lyes the body of John Thurleo (*sic*) Esquire, Secretary of State to the Protector Oliver Cromwell, and a Member of this Honourable Society. He died February 27, 1667." The Vice-Chancellor's two courts, which had been erected within Old-square in 1842, were pulled down in the last two months of 1883, and in March of the next year the court of Sir Lancelot Shadwell, last Vice-Chancellor of England, known to our generation as the late Vice-Chancellor Malins's Court, was demolished. It was erected in 1819, at the north-western corner of the Old Hall. The Chapel was re-opened on April 8, 1883, having been enlarged and repaired, under the direction of Mr. Salter, architect, the contractor being

* Presented to his fellow Benchers of the Inn, by C. P. Cooper, Q.C. Melmoth, born 1666, was called to the bench in 1719; buried beneath the chapel on April 14, 1743.

Mr. Longmore. To our notice of the works in our issue of April 7 of that year, we may add that the communion-table was replaced with one made out of wood from the old roof of St. Albans Abbey.

Illustrations.

SOME CHURCHES UPON THE LOWER RHINE.—IV.

IN the aisles of the nave of St. Victor, Xanten, are a number of Early Mediæval altars, six of which retain their original carved triptych reredoses. The two finest are close together in the south aisle; one is adorned with scenes from the Passion, and is probably a Flemish work. The wings are beautifully painted, and the whole of the architecture and groups of figures are painted and gilt. The second altar has subjects representing scenes from the life of the Blessed Virgin, but the centre statue is not of the same date as the rest of the work. Beneath the triptych is a most marvellous piece of carving representing the Tree of Jesse, almost Chinese in its extraordinary intricacy and elaboration. The whole of this reredos is of uncoloured oak, and is undoubtedly a work of the Calcar school—in fact, it bears a strong likeness to the triptychs in that church. Two of the other reredoses in the church appear to be of quite a different school, and resemble those which are to be found in some of the South German churches, such, for instance, as Moosberg, Rothenberg, Nordligen, &c.; they consist, that is to say, of large niches filled with life-sized statues, and are far less complicated and intricate than the works of the North German and Flemish school of wood-carvers. With the exception of the six altars which we have already mentioned, all the others have rather late Renaissance reredoses,—far better, by the way, in design than one usually meets with in German churches. The altars themselves appear to be all Mediæval, and form a most interesting study to an ecclesiologist: they have great aumbreys cut into their southern ends, and the super-altars, where they exist, are movable features with little doors at their ends; in fact, they probably serve for retaining the candles to be used on the altar. One of these super-altars is very richly painted. The antependia or frontals are of every date, from the sixteenth century down to the present time, and many of them are splendid examples of ancient stuffs and embroidery. One of the altars has an arcaded frontal, like the high altar at Calcar; another of them bears the marks of decorative painting all over its stonework. It would, however, take us too long to enumerate the great number of objects of interest to be found in this most remarkable church, for not only is the building itself rich in every kind of furniture, but the sacristy and Chapter-house are perfect museums of Mediæval art. The only features which are modern are the new stained-glass window at the west end, and the great organ-case: however good these may be in their way from a German point of view, we feel sure that every English archæologist and architect will regret their introduction into a building which is so attractive from the genuine antiquity of all its contents.

H. W. B.

BUILDING FOR THE METROPOLITAN LIFE ASSURANCE SOCIETY.

THIS is the drawing of which we spoke at some length in our article of May 3 on Architecture at the Royal Academy. No plan is given with it, and we publish it simply as a piece of street architectural design of very refined character. The architects are Mr. Aston Webb and Mr. E. Ingress Bell.

BEDROOM IN A COUNTRY HOUSE.

THIS is the second of the two drawings under this title by Professor Aitchison which are hung at the Royal Academy. The explanation given with the publication of the other design in our last issue may be taken as applying to this also.

CHAPEL, ST. MARY OF NAZARETH, EDGWARE, N.

THE illustration is only a portion of a large work Mr. Brooks is erecting at Edgware for the Little Sisters of the Poor. The buildings consist, on the east side, of several rooms for the sisters and dormitories, with kitchens and other offices, laundry and drying-rooms. On the south side is the Mother Superior's sitting-room, dormitory, and reception-rooms, also the refectory. On the west side are the hospitals for incurables. On the north is the chapel. The enclosure within the several buildings is a large burial-ground, with a cloister on each of the four sides.

The chapel is groined throughout, and has a large choir for the sisters, with an ambulatory on the north, south, and east end of choir. Over this is the triforium gallery, the triforium and clearstory, the height to apex of groining being about 76 ft. On the south side of the choir is the Lady Chapel; on the north are two chapels and vestry; west of the choir come the transepts, with a double cloister on the south side leading to the burial-ground. The nave is without aisles; the ambulatory of the choir is carried through transepts and forms a kind of bridge connecting the triforium of the nave with that round the choir. At the west end is a tribune for the patients in the upper wards when attending service. The materials are red bricks and Ancaster stone. The interior of the chapel is wholly lined with stone ashlar. A part only of these buildings has been erected, and other portions are now in progress. The architect is Mr. James Brooks.

ORGAN CASE, ST. JOHN'S COLLEGE CHAPEL, CAMBRIDGE.

THE organ in St. John's College Chapel at Cambridge was built by Messrs. Hill & Son several years since,—at the time the chapel was rebuilt. The case was then omitted for want of funds. A new design for this has lately been made by Mr. J. Oldrid Scott, and executed, at a cost of about 700*l.*, by Mr. Thompson, of Peterborough. It is admirably carried out, the carved panels and other similar features being especially well executed. The cost has been defrayed by a College subscription.

COMPETITIONS.

Board Schools, Bromley. — The Bromley School Board recently invited a limited number of architects to compete for their new schools at Raglan-road for 700 children. We are now informed that on the award of their referee, Mr. R. Norman Shaw, R.A., the design of Mr. Charles Bell has been adopted, and the works will be commenced at once.

Germany.—A "preliminary" competition for a "Rheinprovinz" monument in memory of the deceased Emperor William I., for which twenty-five designs were sent in, has been won by Messrs. Jacobs & Wehling (of Düsseldorf). The winners, who have chosen for their site the far-famed "Drachenfels" of the Rhine, have placed the monument on the summit of this rocky height, and faced it with a magnificent scheme of terraces and cascades and have backed it with a Doric hall of monumental proportions.

The Chancery-lane "Safe Deposit."—The quinquennial anniversary of the Chancery-lane Safe Deposit was celebrated on the 7th inst., and the occasion witnessed the opening of the new extension by Alderman Sir R. N. Fowler, Bart., M.P. The accommodation added to the existing 5,750 safes consists of 250 new strong-rooms, intended for deed-boxes, &c., and two additional large strongholds for deposits, covering an area of 20,000 ft.; these were designed principally to meet the requirements of solicitors and trustees who had the care of valuable deeds and other documents. The strong-rooms are fitted with the electric Light, and were arranged under the superintendence of the well-known firm of Milner, limited.

The A. A. Surveying Class.—This month will prove whether the members of the Architectural Association really desire the class for the study of land surveying and levelling to form a portion of their programme, or to be discontinued. The class started well eight years ago, but of late years has fallen off, an indication apparently that the younger members of the Association prefer the study of art to science. Full particulars are announced in the Brown Book. Names of those members desirous of joining should be sent to the Honorary Secretary of the Class, Mr. S. H. White, 7, Church-road, Brixton, S.W.

ON THE PLANNING AND CONSTRUCTION OF HOSPITALS.*

HAVING settled the dimensions of the ward, the next step is to place the beds and set out the windows. In some of the plans shown you will see that the beds are arranged in pairs with one window to every two beds. This plan of coupling the beds has many disadvantages. In the first place, each bed is unduly near one of its neighbours, instead of being placed in the centre of its own air-space; secondly, the ventilation cannot be so perfect as when each bed has a window each side of it; and, lastly, the beds are necessarily so close on one side to the windows that much inconvenience arises therefrom in the shape of draughts and cold currents of air from the condensing surface of the glass. Each bed, then, should occupy the centre of its own air-space, and should be between two windows.

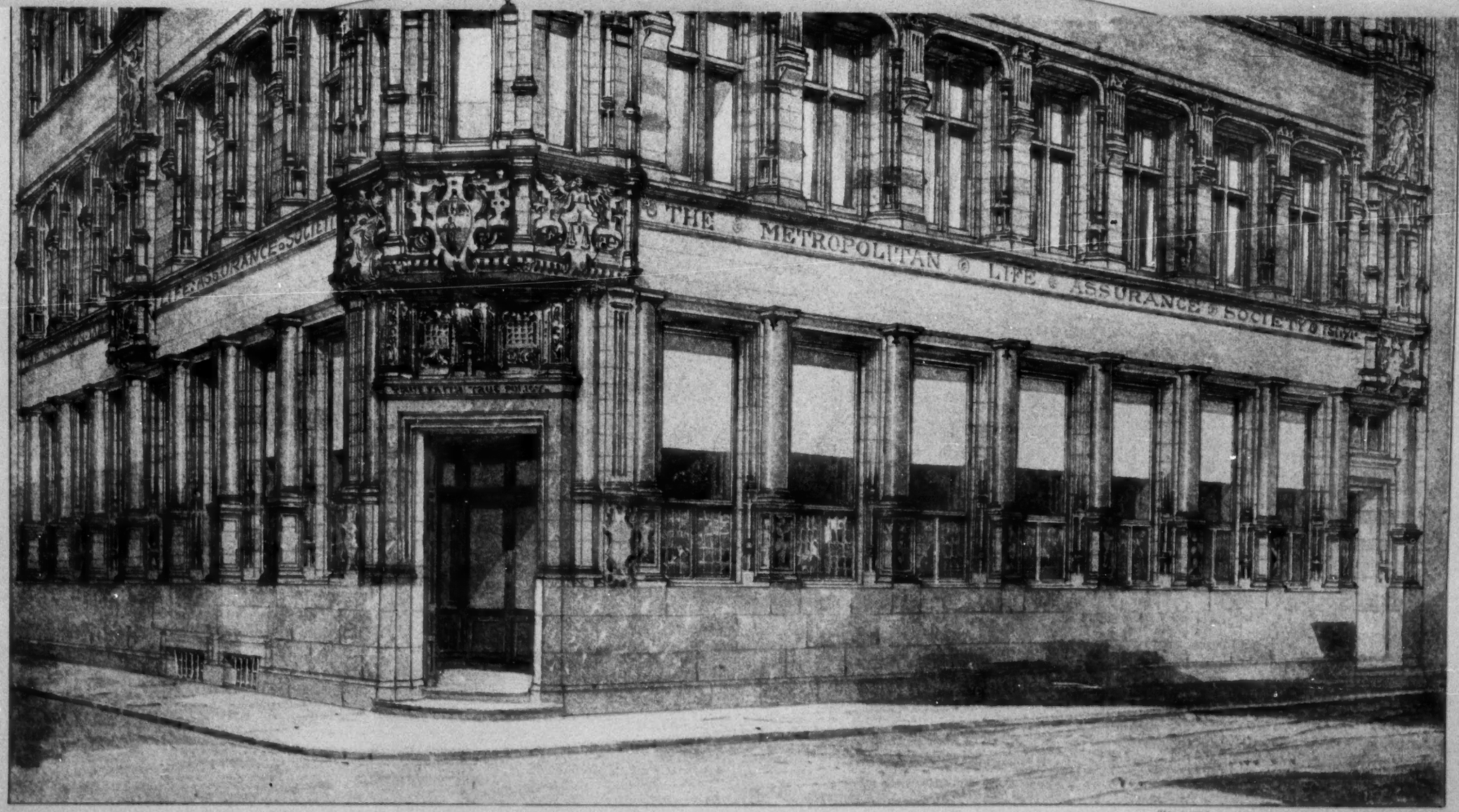
There is one more point to be observed in the arrangement of beds and windows. You will notice that in the wards at the Great Northern Hospital a small window is, in each case, interposed between the end beds and the end walls, and the length of the ward is increased by the space necessary to get this window in. The reason for this is that it has been observed that when, as is usually the case, the end bed stands in a corner with a window on one side only, that particular bed has acquired a bad reputation as one in which cases have not fared as well as they ought; and the interposition of a window between it and the end wall has had the effect of correcting this bad tendency.

There are certain necessary rooms and offices which must be attached to the wards, and form a part of the pavilion. These consist of a ward-scullery (or "duty-room," as it is the fashion to call it), a small larder for keeping food, cupboards for the ward linen and for patients' clothes, bath-room, water-closets, sink-room, and lavatory. To these may be added a small ward, or perhaps two, for one or two beds for special cases. The ward scullery should be immediately adjoining the ward, and is used for washing the crockery used for patients' meals, for making poultices, warming beef-tea, and for the minor processes of food preparation usually done near the ward. It should contain a sink, a small dresser, and plate-rack, and a small cooking-range. Of the cupboards it needs only to be said that they should be large enough, and that they should be well lighted and ventilated. If small wards are required, they should be placed at the entrance end of the ward, and a separate water-closet and slop sink provided for their use.

The water-closets are usually placed at the further end of the ward. In a long ward there is no doubt some inconvenience in this arrangement, but it is, I think, more than counterbalanced by the interference with light and ventilation that would ensue if the closets were projected out at one side of the ward,—the only alternative to the end position. The water-closets must be separated from the ward by a lobby having windows on each side and doors at either end, in order that there may be no communication of air between the closets and the ward. In order to promote the free passage of air around the building, it is desirable to restrict the height of this lobby to just sufficient to give head-room, and to leave the space between the roof of one lobby and the floor of the one above free and open. The sink-room should be in the same building as the closets, and should be large enough to hold a slop-sink, a sink for washing utensils, and a sufficient storage of vessels not in immediate use. The bath-room must be large enough to hold a bath so placed that only one end is against the wall; and large enough to admit of a patient being wheeled in and lifted into the bath.

As regards details of construction, the first and last thing to be thought of in designing a ward is cleanliness. Everything that favours the accumulation of dust or dirt must be studiously avoided. All avoidable corners, all ledges or recesses, all quirks and unnecessary mouldings, are things not to be tolerated within the ward-pavilion. Floors should be as solid as concrete and solid wood-blocks can make them. The ideal wall surface for a ward has yet to be discovered. Parian cement has proved a costly failure, and glazed bricks or tiles not only have

* Continued from p. 339, *ante*, being the concluding portion of a paper by Mr. Keith D. Young, F.R.I.B.A., read on the 2nd inst., before the Architectural Association.



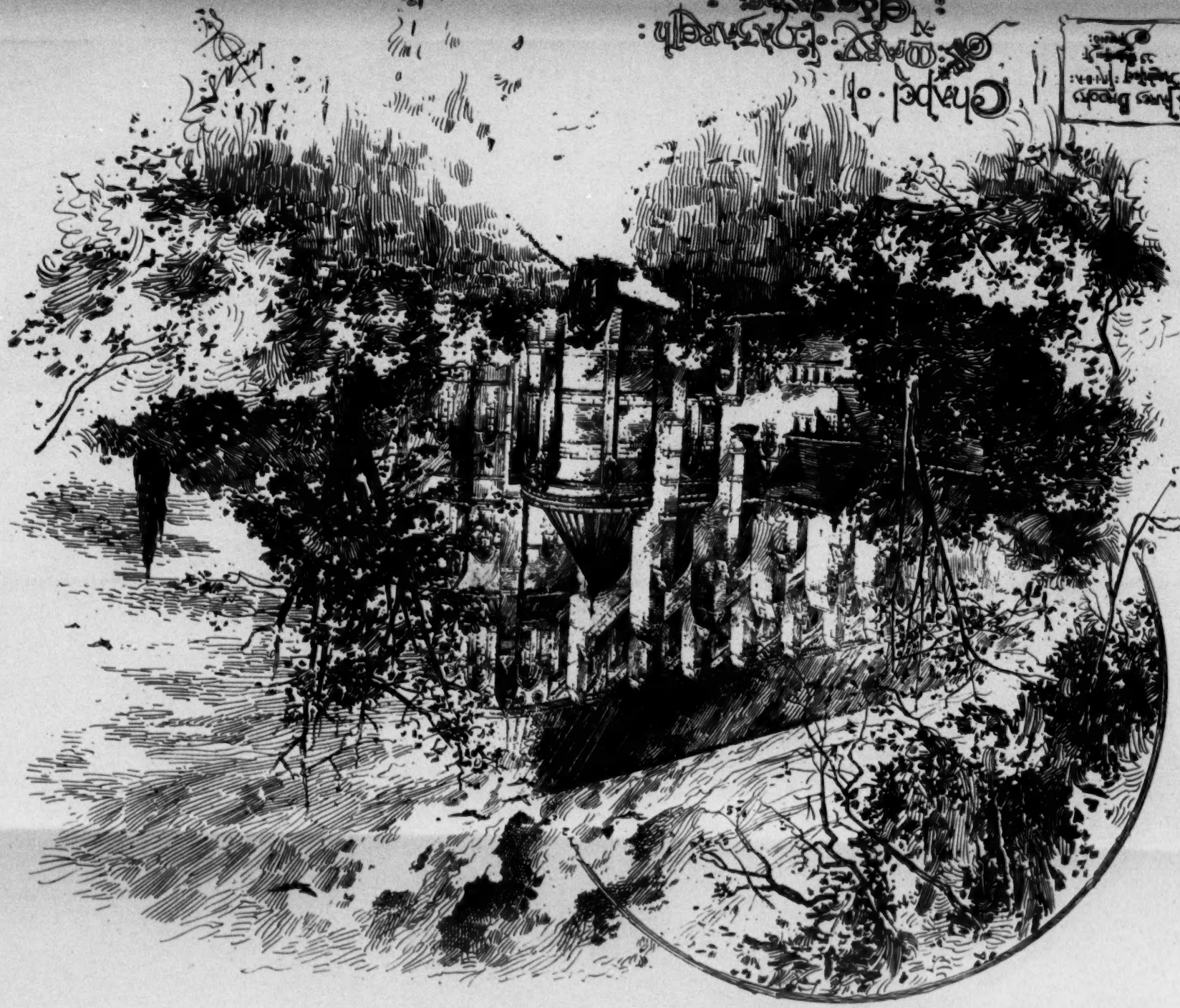
NEW BUILDINGS FOR THE METROPOLITAN LIFE ASSURANCE SOCIETY.

MR. ASTON WEBB, F.R.I.B.A., AND MR. E. INGRESS BELL, F.R.I.B.A., ARCHITECTS.

No. 1793 Royal Academy Exhibition, 1890.

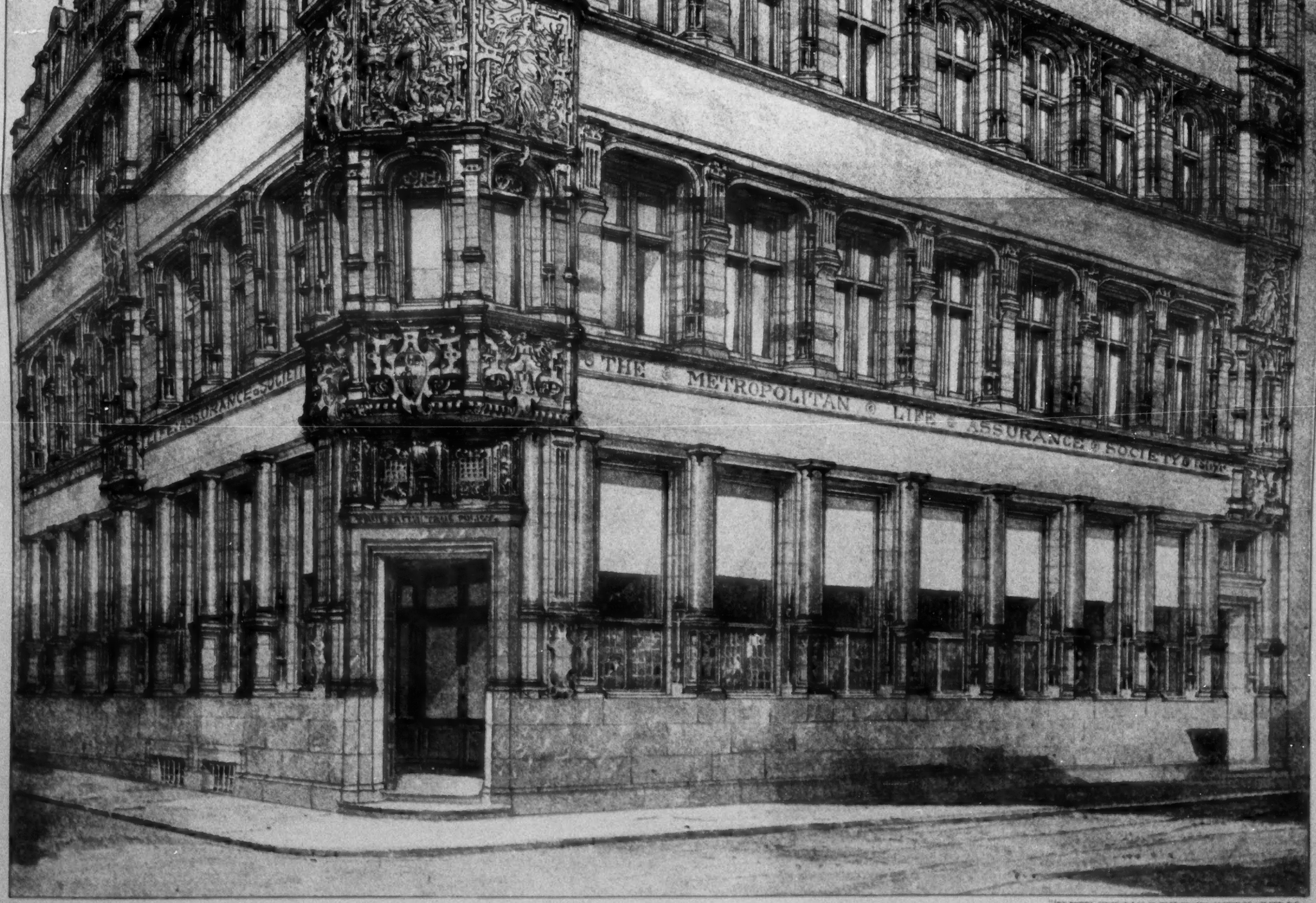
Chapel of Pembroke College, Cambridge.

Mr. James Brooks
Architect
33 Queen Anne's Gate
Westminster



Mr. James Brooks
Architect
35 Bromfield St.
Boston

Chapel of St. Mary of Nazareth at Edgehill



NEW BUILDINGS FOR THE METROPOLITAN LIFE ASSURANCE SOCIETY.

MR. ASTON WEBB, F.R.I.B.A., AND MR. E. INGRESS BELL, F.R.I.B.A., ARCHITECTS.

No. 1793 Royal Academy Exhibition, 1890.

ALTARS IN THE SOUTH AISLE,

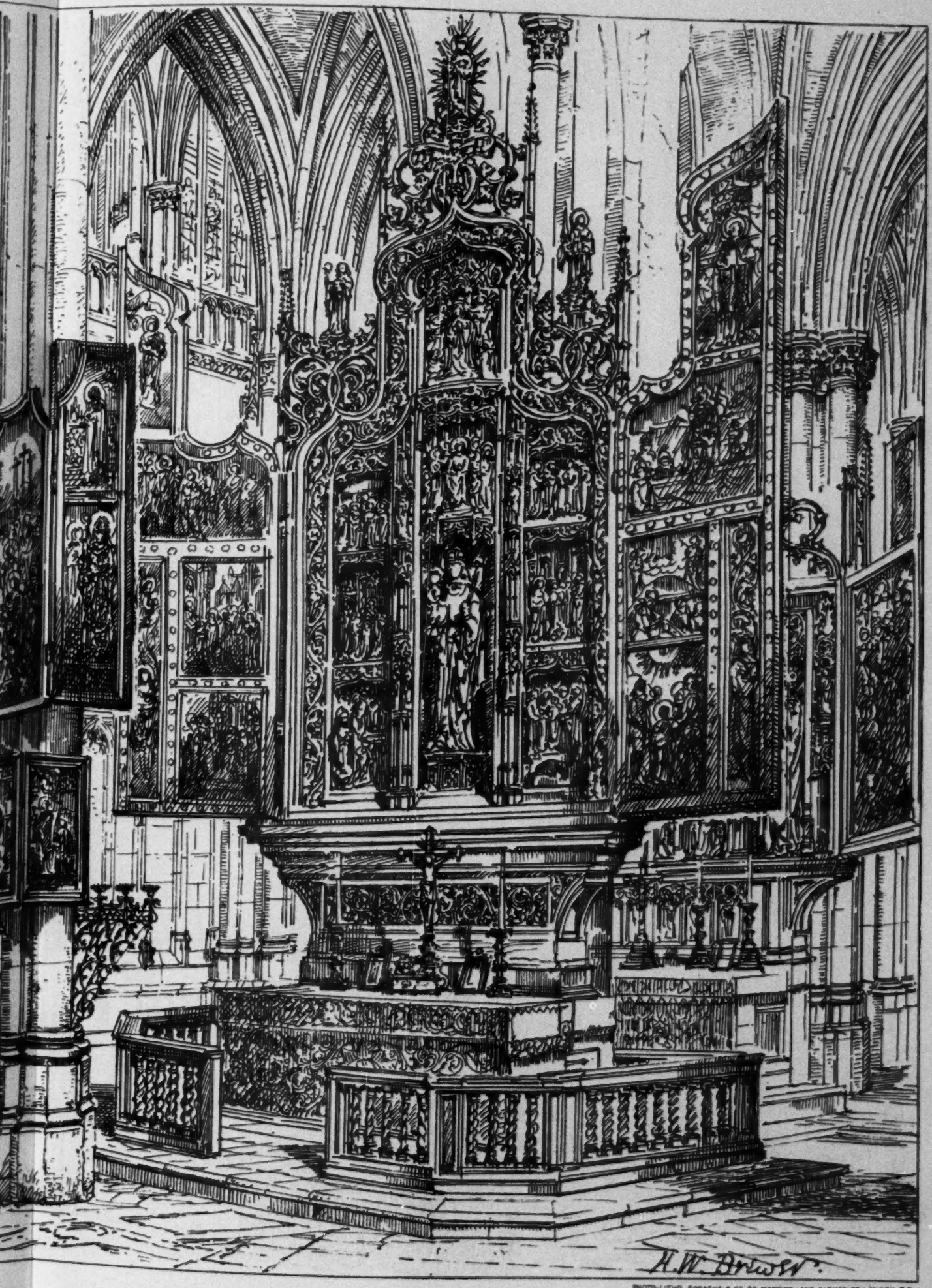
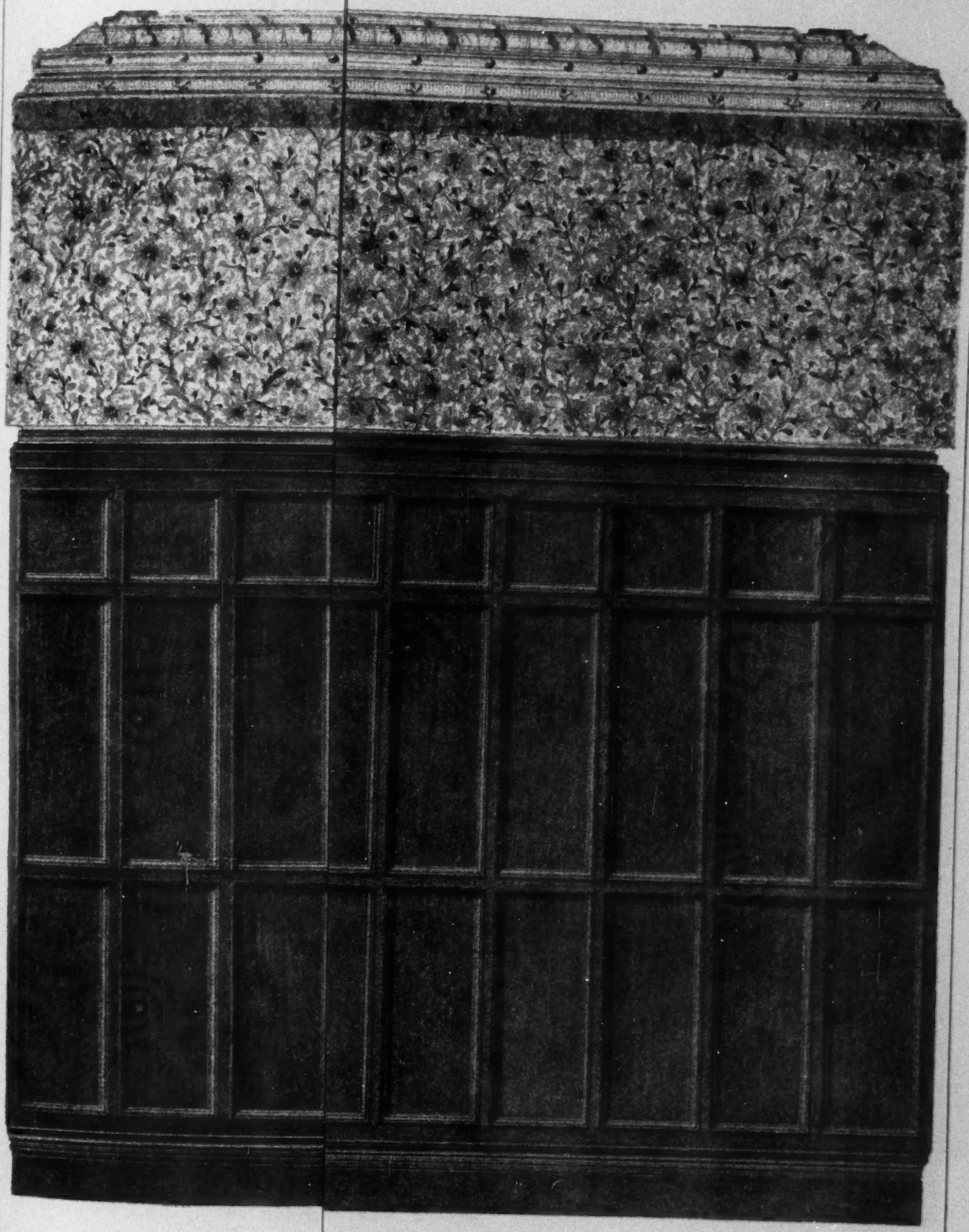


PHOTO-LITHO. SPRAGUE & Co. 82, MARTINS LANE, CANNON ST., LONDON, E.C.

LE, ST. VICTOR, XANTEN, GERMANY.



"THE PHOTO," SPRAGUE & Cº, 82, MARTINS LANE, CANNON ST, LONDON, E.C.

1716 Royal Academy Exhibition. 1890.

BEDROOM IN A COUNTRY H

2716 *Royal Academy Exhibition. 1890.*

TRY HOUSE.—Professor Aitchison, A.R.A.

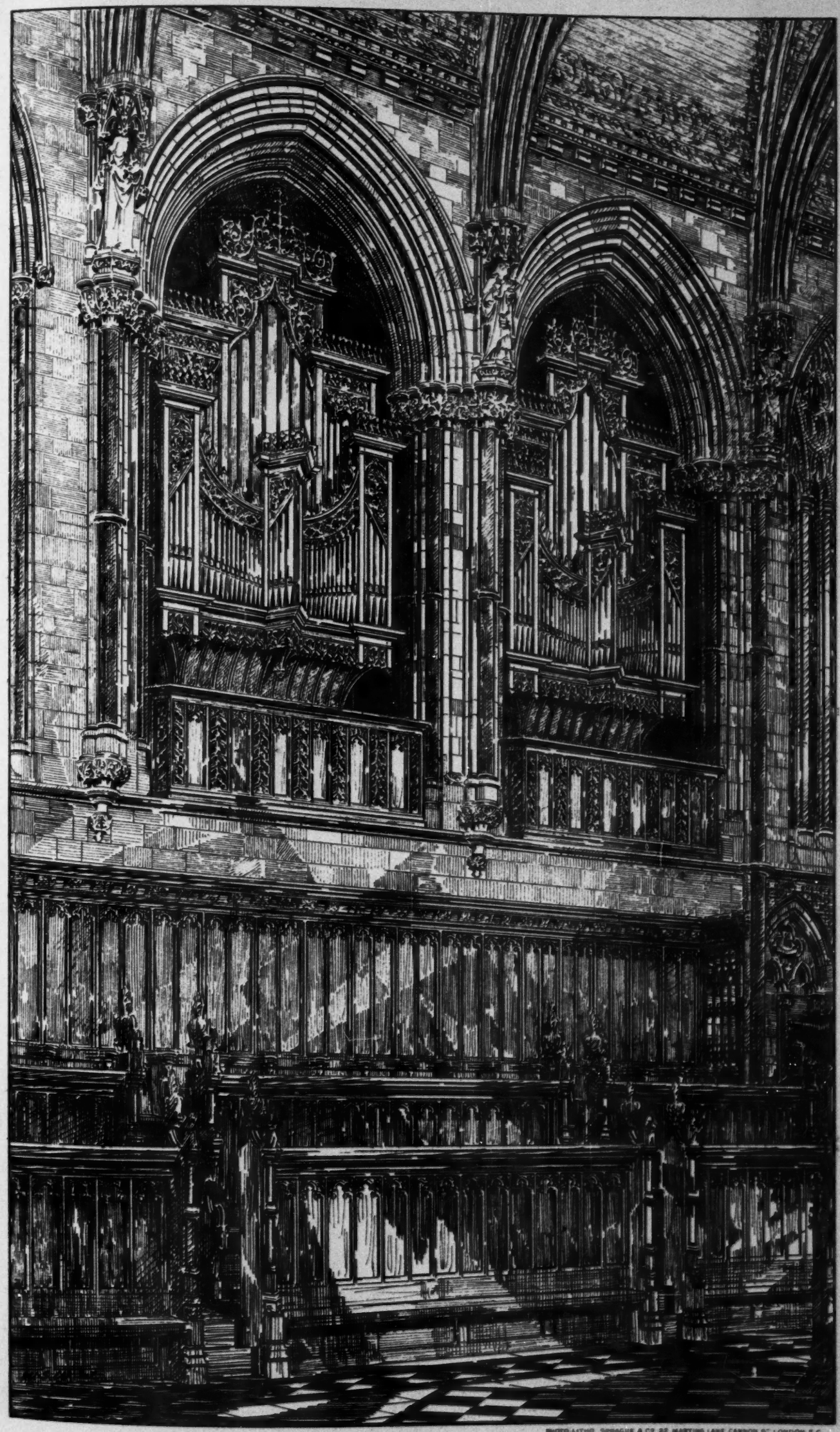


PHOTO-LITHO. SPRAGUE & Co 82, MARTINS LANE, CANNON ST, LONDON, E.C.

NEW ORGAN CASE, ST. JOHN'S COLLEGE CHAPEL, CAMBRIDGE.

No. 1738 Royal Academy Exhibition, 1890.

MR. J. OLDRID SCOTT, F.R.I.B.A., ARCHITECT.

many joints, but cannot be had of sufficiently true a surface to prevent altogether the lodgment of dust. In France the ward-walls are usually finished with what is called "*stuc*," which is neither more nor less than some kind of cement painted and varnished. I think myself that there is much to be said in favour of the plan adopted at the Middlesex Hospital. Most, if not all, of the wards were many years ago covered with Parian cement, the surface of which was polished. This proved to be by no means the impervious surface that was expected, and eventually the lower surface of all the walls was covered with a painted and varnished dado, and the space above distempered. Every year each ward is in turn emptied, the distemper cleaned off down to the bare cement, and the walls and ceilings re-coloured. One obvious advantage is that each ward gets a thorough and systematic cleansing at regular intervals, which is probably the best safeguard against septic disease.

The ventilation of a ward is, of course, a matter of the highest importance, for upon its efficiency and thoroughness the health of the patients mainly depends. Ventilation is commonly divided into two classes, natural, and forced or artificial ventilation, the one being accomplished by the aid of open windows and the ordinary fireplaces, the other by the aid of aspirating fans or exhaust furnaces, or a combination of the two. It is impossible for me to enter into the complex details of artificial ventilation within the limits of this paper—nor is there, I think, any great advantage to be gained by doing so. There is, I think, very little doubt that in England the most suitable form of ventilation is the most simple. Opposite windows assisted by the extracting power of open fireplaces supply all that is required, where properly handled, to keep the atmosphere sufficiently diluted. With our humid atmosphere and comparatively equable climate, where the changes of temperature are seldom either rapid or great, there are very few days in the year when ventilation by open windows cannot be resorted to. In America, on the other hand, the changes of temperature are so sudden and excessive and the atmosphere so deficient in moisture, that mechanical ventilation would seem to be a necessity.

The best form of window for a ward is, I think, the double-hung sash, with a hopper-light above. The lower sash should have the deep bottom rail and cill-board, and the hopper should have glazed cheeks at the side, to give the entering air an upward current, and to prevent down-draughts. It is desirable, also, to have some means of admitting air at the floor-level under each bed.

Before we leave the ward-pavilion, I will just refer to the mode in which in many hospitals abroad the wards are raised above the ground upon piers, and the space thus obtained left open for the free circulation of air. The plan is a further development of the pavilion system, by isolating the ward from the ground, and preventing the stagnation of air around the building. We have adopted this plan at the Great Northern Hospital, but in this instance there are additional reasons in the matter of levels and light and air which rendered it almost a matter of necessity.

We now come to the operation-room, which I have not mentioned as a special department, as it is an essential part of the ward or in-patient department. In large hospitals with medical schools attached the operation-room becomes a theatre, with its tiers of benches for students. Where no school exists it should be a room of sufficient size to hold the table, with room all round it for the operating surgeons and their assistants and nurses. Its aspect should be north, and it should have a top-light and a vertical light, and means should be provided for shutting-off entirely either light at will. Everything in the operation-room should be made as aseptic and impervious as possible, and floor, walls, and ceiling should be capable of being washed down with a hose-pipe.

The new operation-room at Chartres Hospital, built in 1886, is a detached building fifty yards distant from the hospital, and with no covered communication between the two. Inside the room everything is formed of washable materials; the surfaces of floors, walls, and ceiling are of cement, the window-frames are of iron, the table and shelves are of glass, and the operation-table itself is of zinc.

At the Derbyshire General Infirmary we have recently rearranged the operation-room, with the object of rendering it as aseptic and washable as possible. The walls are lined up to a height of about 7 ft. with marble, the vertical and horizontal angles being rounded to a radius of 6 in. The floor is of Mischiati mosaic, laid to a fall with a specially-made fitting of gun-metal, closing the aperture to an open pipe leading out to a gulley. The walls above the marble lining are painted and varnished. The sashes, skylight, and doors are all of iron, and every part is flush, no projections of any kind being allowed. The sinks and lavatory-basins are of porcelain, and the tops of plate-glass. The advantage of using glass is that it can be seen at a glance whether the *under* side is clean. All pipes, the lavatory-tops, and the shelf for instruments, are kept clear from the wall, so that no corners are formed.

Adjoining the operation-room should be a room for the surgeons, in which the instrument-case should stand, and at least one room for the administration of anæsthetics. The position of the operation-room should not be too far removed from the wards; at the same time, care must be taken to isolate it from all possible communication with the ward air. It must also be remembered that the operation-room should be quiet, and kept free from disturbing sounds from without.

In many large hospitals there are, besides the large general operation theatre, smaller operation-rooms used for special purposes,—about which it is only necessary to remark that for operations on the eye a vertical light is an absolute necessity, and that for all purposes a north light is the most valuable.

The mortuary and *post-mortem* room must, as I have before remarked, be placed in an absolutely detached building; and must also be at a sufficient distance from the wards to put any chance of contamination of the air of the latter beyond the range of possibility.

Here, again, scrupulous cleanliness is all-important, and every part must be made easily washable. Cleanliness in the *post-mortem* room is of vital importance for the sake of those who have to work there, and I think as much care should be taken to make it washable and aseptic as if it were an operation-room.

The out-patient department is really a separate institution, and except for the convenience of having a dispensary common to both in and out-patients there is really no advantage in having both departments in one group of buildings. It is, of course, also the fact that the out-patient department is the source from whence many of the in-patients are drawn; but this fact certainly does not necessitate a very close proximity between the two departments. The fact is that very serious evils have occurred in the past through the intimate intercommunication existing between out-patients' departments and wards, and there can be no doubt that the more distinct the two are kept the better for the patients in the wards.

I am unwilling to lay undue stress upon my own work; but in order to illustrate this part of my subject, I must once again refer to the Great Northern Central Hospital,* the out-patient department of which is a one-story building wholly detached from the rest of the hospital. There are two entrances, one for male the other for female patients. These each open into a small waiting-room for new patients, the two rooms being separated by the office for registration. These waiting-rooms and the office open into the large central hall, at the further end of which are grouped the four consulting-rooms, with their small rooms attached for special examination of patients, and a dark room for ophthalmoscopic work. All these rooms open into a corridor which leads to the dispensary waiting-room. The grouping of the consulting-rooms at the end of the waiting-hall rather than at each side, and the arrangement of the corridor at the back, are planned with a view to prevent patients retracing their steps, or, as far as possible, crossing each other. The closets for each sex are entirely outside the building. The dispensary serves for both the in and the out-patient department, and as by far the heaviest part of its work is concerned with the latter, it must be placed with reference to it rather than to the former.

One of the most important things to observe in a hospital dispensary is to make it small enough. The work has to be done at such pressure that it is important to reduce as far as possible the labour involved in doing it. A room where the dispenser could reach all the bottles he requires by simply stretching out his arm without moving his feet would, if it could be made, be an ideal dispensary.

We have now, I think, travelled over every part of the hospital, and considered, in as full detail as the time at our disposal warrants, most of the arrangements upon which the health and comfort of the patients depend. Some things I have not touched upon. I have said nothing, for example, of drains, because there is nothing that has to be said of a hospital drain that does not equally apply to the drain of any other building intended for habitation. Neither have I said anything about circular wards, because I wished to confine myself to well-ascertained principles, and to avoid anything of a controversial nature. That circular wards are, within certain limits, as efficient, and, under certain conditions of site, superior to rectangular wards I am convinced, but the main principle involved has yet to be decided by the test of time—a test which will be applied in the new Royal Infirmary at Liverpool, now approaching completion from the designs of Mr. Waterhouse.*

Let me conclude by urging those of you who care to follow up this, to me, most interesting of all studies which fall to the lot of our profession, to learn well the lessons which the experience of the past has to teach us; and above all to study the matter, not from books, but from the hospitals themselves. The most valuable lessons that can be had are those which are got only by careful observation of the daily life of a hospital, and by noting how, by thoughtful care for this or that detail, the great and unceasing work of keeping a hospital clean can be helped and simplified.

The Chairman (Mr. Leonard Stokes, President), having invited discussion,

Mr. F. T. Baggallay, in moving a vote of thanks to the author of the paper, said that Mr. Young had made the subject so entirely his own that his paper was especially valuable to them.

Mr. A. O. Collard said he had much pleasure in seconding Mr. Baggallay's proposition, for Mr. Young had evidently taken great pains in placing the results of his valuable experience before them. He had spoken of the horrors of the old Hôtel Dieu, which were terrible to think of; but he had also been extremely kind in not calling attention to some of the older hospitals which we had in London, which were in many respects examples of what hospitals ought not to be. Several of our existing hospital buildings would require the expenditure of a large amount of money to put them into proper condition, and it was greatly to be regretted that their defects were not more widely known and more exposed to public criticism than they were. He (the speaker) noticed that in the isolation ward of the London Fever Hospital, Liverpool-road, the walls were of glazed bricks or tiles. He should like to know how alternations of temperature affected the surface of the tiles,—whether they did not frequently become streaming with wet in the shape of condensed moisture; and, if so, what was the effect upon the patients? Mr. Young, in giving them the maximum and minimum limits of cubical space, did not refer to the regulations issued by the Local Government Board. Those regulations were based upon the information provided by doctors and the Board's own professional architectural adviser, and they seemed to be very nearly a mean between the two extremes. They were very useful. Mr. Young had spoken so strongly upon the advantages of natural ventilation whenever it could be obtained that it was not necessary to say more upon that point. Mr. Young had very truly remarked that the subject of hospital planning must be studied, not only from books, but from the actual buildings themselves.

Professor McHardy, of King's College Hospital, in an amusing speech, said that Mr. Young, in his capacity of architect, was one of the best friends of the sick poor which Europe

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* See plan published in the *Builder* for Dec. 25, 1886.—Ed.

* Amongst other hospitals with circular wards, we may mention the following, which have been described and illustrated in the *Builder* for the dates mentioned, *viz.*:—Civil Hospital, Antwerp (July 7, 1883). The "Miller" Memorial Hospital, Greenwich, erected as a memorial to the late Canon Miller, the founder of "Hospital Sunday": a description and plan of the building, showing circular ward, were published in the *Builder* for Aug. 23, 1884. Hospital for Seaforth Cavalry Barracks, designed by Major-General Sir Andrew Clarke, R.E. (Nov. 15, 1884). Hospital of one story, with circular wards, for Egypt, designed by the Viscountess Strangford (Jan. 3, 1885). Design for a Military Hospital for a hot climate, by Sir Andrew Clarke and Mr. E. Ingress Bell (May 9, 1885). The Great Northern Central Hospital, Messrs. Young & Hall, architects (Dec. 25, 1886).—Ed.

possessed. He (the speaker) congratulated the architectural profession upon the advance which had taken place in the study of hospital planning during the last quarter of a century. Some twenty-five years ago there was opened the Poplar and Stepney Sick Asylum, which to the speaker's notion was the first really creditably-planned and arranged hospital for the sick poor of this country. Since then great advances had been made, and although he (the speaker) had been studying the question and writing upon it for many years, he had now given up writing on the subject, because he found that architects such as Mr. Young were able to teach him. He quite agreed with Mr. Young as to the importance of avoiding all mouldings, or quirks, or whatever they might be called, which would collect dust and dirt; for cleanliness and facilities for cleanliness were most essential conditions for successful nursing. Mr. Young had very well said that the nurses' quarters should be right away from the hospital wherever possible. While it was all very well and very proper to provide all that was necessary for the comfort of the patients, many of whom were hopelessly diseased and incurable, it was not desirable, nor was it necessary, that the nurses should be entirely sacrificed to the patients. It was a melancholy fact that the death-rate of nurses was just double that of any other class of women in the kingdom, and it was eminently desirable that their quarters should be right away from the hospitals whenever possible—*i.e.*, in separate buildings, and not in the buildings where the hospital wards were situate. The nurses must no longer be stowed away in unwarmed and unventilated garrets, or in places where a man would not think of stabling his horse. It was also desirable that they should remember, as Mr. Young had pointed out, that every bed in the ward should have a window on each side of it. It had been noticed that a bed placed at the end or corner of a ward, with a window on only one side of it, was not so favourable in position for the recovery of the patient as a bed with a window on each side of it. The mortality in these end or corner beds had been found to be greater than in the others. Another important point for architects to remember was to insert clear glass panels in all cupboard doors, so that the interiors of the cupboards could be readily inspected. Some women, even hospital nurses, were very untidy, and he had known them make cupboards with opaque doors serve as receptacles for all kinds of filth. In regard to the heating appliances of hospitals, it was necessary to provide sufficient heating-power to meet the necessities of old and infirm patients in the very extreme of cold weather. It would not always be necessary to utilise the heating-power to its full capacity, or anything like it, but it should be so arranged as to afford the means of increasing or decreasing the heating-power, as might be necessary from day to day. As to the regulations of the Local Government Board they were all very well, but he urged architects not to be led by the Local Government Board, but to lead it. The Local Government Board, between the cross fires of opposing interests, was perhaps rather too prone to compromise matters, and compromises were not always satisfactory. Moreover, there was about the Local Government Board, as about all other Government departments, a great deal too much red tape.

Mr. P. Gordon Smith, Architect to the Local Government Board, who was called upon by the Chairman to address the meeting, said that he did not know that he could add anything of practical value to what Mr. Young had so well told them in his paper. He was a little surprised to hear the last remark of Professor McHardy, because as far as he (the speaker) was concerned, he was always only too eager to avoid the entanglements of red tape.

The chairman, in closing the discussion, said they could not be too thankful to Mr. Young for his paper. There was one point, however, upon which he should like to ask a question. Mr. Young had spoken of the desirability of keeping the out-patients' department as distinct as possible from the in-patients' department, with a view partly to prevent any infection being brought into the hospital. But he should like to ask what special precautions, if any, could be taken to prevent out-patients themselves from communicating infectious diseases to each other? He then put the vote of thanks to the meeting, which was carried by acclamation.

Mr. Young in briefly replying, said that no special means of preventing the communication of infectious diseases from one out-patient to another could be taken beyond the precautionary measures which were taken at one or two hospitals he knew, where the nurse or other official in charge of the out-patients' department exercised all possible vigilance, and at once isolated all patients whose symptoms appeared to be those of infectious disease. As a matter of fact, the form in which infectious disease was most frequently detected in the out-patients' waiting-rooms was scarlatina. The nurse or nurses in charge of the out-patients' waiting-room consequently kept a vigilant eye upon all children, and isolated them in a separate room provided for the purpose until the doctor could see them. Where that system had been adopted it had been found to be very successful.

The meeting was then brought to a close.

SHEFFIELD SOCIETY OF ARCHITECTS AND SURVEYORS.

THE third annual meeting of this society was held at the School of Art last Tuesday night, Mr. C. J. Innocent, Vice-President, occupied the chair, in the absence of Mr. F. Fowler, the President, who wrote expressing regret that he was indisposed. There was a good attendance of members.

The report of the Secretary, and the Treasurer's statement of accounts, were read, and showed that the Society now consisted of 44 Fellows, 24 Associates, and 6 Students, and that the balance in hand is 55*l*.

The report stated that an invitation had been received last July from the Royal Institute of British Architects to hold the first Preliminary Examination in conjunction with the Institute and the allied societies. Seven candidates had presented themselves and passed, and had been registered as Probationers of the Royal Institute of British Architects, and their names published in the Institute Calendar for the current year. The Council gave a guinea book-prize, and remitted the examination fee in each case to signalise the importance of the inauguration of a series of examinations for the rising generation of architects. Interesting papers had been read on "Engineering Surveying for Railways and Waterworks," by Mr. W. H. Lancashire; "Old English Ironwork," by Mr. H. Longden; "Elementary Notes on the Mouldings of English Mediæval Architecture," by Mr. J. B. Mitchell-Withers; "The Valuation of Property," by the President; "Municipal and Sanitary Engineering," by Mr. C. F. Wike, Borough Surveyor; and "The Present State of Questions relating to Quantities," by Mr. T. M. Rickman, of London.

The Council has also supplied information to the Standing Practice Committee of the Royal Institute of British Architects, having received a communication from the Hon. Secretaries, on the general practice relating to quantities in the Sheffield district. The Council has had under careful consideration certain suggestions to accompany the By-laws of the Sheffield Town Council as to new streets, buildings, and plans of the same.

The need of an independent meeting-room and room for the use of the Library was urged upon the members.

The report and balance-sheet were adopted, on the motion of the chairman, seconded by Mr. Gibbs, and supported by Mr. Smith. A ballot then took place, and Mr. W. Farrington was unanimously elected an Associate.

The meeting next proceeded to ballot for the election of Officers and Council for the coming year, Messrs. W. C. Fenton and C. Gibson acting as scrutineers. The following were elected for the season 1890-91:—President, Mr. F. Fowler; Vice-President, Mr. C. J. Innocent; Treasurer, Mr. J. B. Mitchell-Withers; Hon. Secretary, Mr. C. Hadfield. Council: Messrs. T. J. Flockton, E. M. Gibbs, W. F. Hemsoll, W. H. Lancashire, and W. C. Fenton.

The meeting had under consideration "detailed suggestions and particulars relating to the formation and construction of new streets, buildings, &c.," which it is understood will be considered at the next meeting of the Town Council; and as it appeared to the members some of these suggestions would involve considerable expense and trouble to the building public, and might well be modified without interfering with the objects aimed at, it was resolved to memorialise the Town Council on the subject.

THE ASSOCIATION OF PUBLIC SANITARY INSPECTORS.

AT the monthly meeting of this Association, held on the 3rd inst. at Carpenters' Hall, with Mr. H. Alexander in the chair, a paper on "The Drainage of Buildings and its Relation to Health" was read by the Deputy-Inspector of Nuisances of Bristol, Mr. Thomas Lowther. The existence of so many systems of drainage, and the great diversity in opinion among experts, made it, in the lecturer's opinion, highly necessary that "public officers" administering the laws of health should be thoroughly acquainted with the correct principles upon which the drainage of buildings should be carried out. Even where such work was entrusted to professed sanitary engineers, satisfactory results were not always obtained, for generally some local plumber or builder, possessing perhaps but little knowledge of this particular branch of sanitary work was called upon to do it. House drainage properly carried out was the completion of a perfect system of sewerage. A town might be possessed of otherwise perfect drainage, but health would not be greatly improved if house drains were left in their old dilapidated state. The serious danger incurred by individuals continually inhaling foul gases from defective drains would not be endured but for hygienic and physiological ignorance. Drains in former times were vast in volume, and in them the velocity of passing sewage was so reduced as to lead to a rapid deposit of solid matter. They were thus converted into cesspools that produced gas laid on to the houses as completely as coal-gas could be from a company's mains. Unfortunately in modern houses a similar state of things too often still prevailed. Drainage systems were divisible into four classes, viz., the ordinary, sectional, manhole chamber, and iron connecting pipe systems. In the first, where no means for inspecting drains below ground were provided, and where it was impossible to test any portion from a trap, it was difficult to tell in case of a stoppage where to look for it, and expensive excavations had often to be resorted to. In such systems fresh air inlets should be carried up above the main roof. To assist ventilation, powerful exhaust cowls should always be fixed on outlet vent-pipes to assist circulation. In systems like those of Hellyer, Banner, Buchan, and others, belonging to the "sectional" class, intercepting-traps were placed at the foot of each soil-pipe, and the air inlets being generally fixed right over them all portions were separately ventilated. Such a system was subject to serious defects, and in the lecturer's opinion it should not be applied to private dwellings, but should be confined to infirmaries and similar institutions, particularly infectious hospitals. He would advise the use of lead traps and connecting pieces with wiped lead joints. In any good system the only joint in a house would be that connecting water-closets with a soil pipe outside. The lecturer had for many years practised the "Manhole Chamber system," to which he gave a preference, as did nearly all advanced sanitarians now. In this class drains were laid out in straight lines from manhole to manhole, these being constructed with intercepting traps at angles and at other necessary points. Good workmanship in constructing such drains must be insisted on, and if either stoneware or cast-iron pipes were used, they should be truly laid in a uniform gradient. Stoneware pipes should further be laid on beds of concrete, their numerous joints being particularly liable to get started by vibration resulting from heavy traffic in adjacent streets. In the Scott-Moncrieff system, iron pipes were used in connexion with manhole chambers, fitted in this system with cast-iron manhole frames. Cast-iron pipes, which had been in partial use many years, possessed many advantages, but they were costly, were liable to interior fouling, and a fear was expressed with regard to the Moncrieff frames that unless inspections were frequent, the bolts would become immovable, and thus render this system useless. On account of its simplicity and other advantages, the lecturer considered the manhole system better than any previously brought forward, whether in conjunction with cast-iron or stoneware pipes. Among intercepting traps, Winser's, Rogers Field's, Crapper's, and Buchan's were described as fairly good, Winser's 4 ft. by 6 ft. taper traps being thought particularly worthy of mention. Damp sites were, in conclusion, touched upon,—diphtheria, consumption, and other preventable diseases being, in

Mr. Lowther's opinion, very frequently induced by constantly breathing air charged with watery particles. Such sites should be carefully prepared by effectual drainage, distinct (if possible) from the house-drains, and the whole site should be concreted.

A discussion followed. Mr. Legg, the secretary, in moving the usual vote of thanks, expressed satisfaction that the vital question of codifying the sanitary regulations of the Metropolis was being considered by the London County Council. A uniform code would add to the number of Inspectors in the Metropolis, the 111 at present in office having a population of 45,000 per man, on the average, to look after. Mr. Fairchild seconded the motion, which was supported by Messrs. Hills, Tidman, Richards, Perry, Grant, and others, besides the Chairman, by whom the discussion was brought to a close. The vote of thanks having been unanimously accorded, was briefly acknowledged by Mr. Lowther.

THE LONDON COUNTY COUNCIL.

THE ordinary weekly meeting of this Council was held on Tuesday last in the County Hall, Spring-gardens, Lord Rosebery in the chair.

Parks and Open Spaces.—The following adjourned report of the Parks and Open Spaces Committee came up for further consideration:—

"Early in 1889 the Council was asked by the Metropolitan Public Gardens Association to undertake the maintenance of certain gardens and playgrounds, mostly of small size, in various parts of London, which the Association had laid out at a cost of 4,427*l*. It is contrary to the rule of the Association to maintain grounds; but they obtain the necessary funds and lay out, either as gardens or as playgrounds, spaces in the poorest and most crowded districts of London; and then, having proved by a short period of maintenance the value of such places for recreative purposes, ask the local authorities to maintain them. Unfortunately, the places being generally situate in poor neighbourhoods, the local bodies themselves frequently do not feel justified in adding to their expenses, having regard to the fact that their ratepayers are already taxed for the maintenance of the large parks, into many of which they are debarred by distance from entering. The Association have, therefore, as regards the places to which we at present refer, applied to the Council for aid. We have given the subject careful consideration under every aspect. We first of all invited the local authorities to maintain the places or to contribute to their maintenance. The comparatively wealthy parishes of Hampstead and Islington have agreed to maintain in the one case Haverstock-hill playground, and in the other, Barnsbury and Edward-square-gardens. These three places are therefore not included in the list. As regards Red Lion-square garden, the Holborn District Board has agreed to contribute £52 annually for its maintenance, and the Whitechapel District Board, which already maintains one recreation ground of its own, has promised £50 a year towards the keeping up of the Winthrop-street playground. The other places being situate in parishes where the rates are already heavy, and the ratepayers mostly poor—viz., Mile-End, Bethnal-green, Ratcliff, Shadwell, Limehouse, and Rotherhithe, the local authorities have, whilst acknowledging the value of the places, expressed their inability to maintain or contribute. We should take this opportunity of stating, as the result of several visits paid to the places named, that we quite agree with the local bodies as to the value of them for recreation, and we also consider that the mere size of a place has nothing whatever to do with its value in this respect. Indeed, in the crowded parts of Eastern London, large open spaces cannot now be obtained. We would also remark that, maintained as part of a general system, these gardens and playgrounds can be more economically kept up by a central authority, which has a special gardening staff, than by a local body which, although possessing roadmen and servants of that class, has no skilled gardening staff. We consider, however, that the wealthier parishes should specially contribute to the Council's expenses in the matter. It is with great regret, therefore, that we have to mention the refusal of the Vestry of St. Martin-in-the-Fields, after more than one application made by us, to either maintain or in any way assist in the maintenance of the parish churchyard as a recreation ground, or of a disused burial-ground in Russell-court, Drury-lane, which is within their district. With regard to this latter place, we feel its value so much for the poor children of the congested neighbourhood where it is, that we have included it in the list; but, as regards St. Martin's Churchyard, we are not prepared to move. As regards the annual cost of maintaining the places which we recommend the Council to take over, we may state that it will probably be about £1,020. We would remind the Council that the taking over of these grounds does not bind it to assume the charge of every other place which may be laid out under similar circumstances, nor even to maintain the places here mentioned one hour longer than they are found to be of public utility. Having placed the Council in possession of the facts, we recommend:—

"That, subject to an estimate being submitted to the Council by the Finance Committee, as required by the statute, the Council do undertake, at an estimated cost of £1,020 a year, the future maintenance of the following places:—

	Area.	Estimated cost for wages.
1. Red Lion-square-garden, Holborn	1a. 2r.	£28
2. Winthrop-street-play-ground, Whitechapel	0a. 2r.	30
3. St. Dunstan's Churchyard, Stepney, garden	7a. 0r.	142
4. Limehouse Churchyard-garden	3a. 0r.	111
5. Holy Trinity Churchyard, Tredegar-square, Bow, garden	1a. 1r.	80
6. Carlton-square-garden, Mile-end	0a. 3r.	80
7. St. Paul's Churchyard, Rotherhithe, garden	0a. 3r.	80
8. Spa-fields-playground, Exmouth-street, Clerkenwell	2a. 0r.	80
9. Drury-lane-playground, Russell-court	0a. 1r.	80
10. St. Paul's Churchyard, High-street, Shadwell, garden	1a. 0r.	80
11. St. Bartholomew's Churchyard, Bethnal-green, garden	1a. 0r.	80
	19 0 acres.	871
Materials		149
		£1 020"

These recommendations led to a long discussion, several amendments being moved, and ultimately the further consideration of the subject was again adjourned.

The Strand Improvement.—Mr. Charles Harrison, chairman of the Parliamentary Committee, presented the report of that Committee, of which the following was the first paragraph: "The Strand Improvement Bill came before the hybrid Committee of the House of Commons on the 8th inst., when the Council's case was opened by Mr. Pope, Q.C., and the chairman of your Committee was partly examined as a witness. The deposited plan showed that the width of the Strand after the widening opposite Norfolk-street would be 100 ft., and that the north line of the new street would be a little south of the eastern end of Holywell-street, with limits of deviation up to Wych-street in a triangular form. The Chairman of the Committee of the House desired counsel for the Council to state on the following morning what land out of that comprised in the present limits of deviation was required by the Council for the line of street. After consultation with the Valuer and Engineer, we concurred in their views, and were of opinion that the plan, as explained by them, would be the best plan to adopt, by which in effect the whole of the site of Holywell-street would remain as part of the site or addition to the new street, and that the narrow strip of land (about 3,000 superficial feet) south of Holywell-street, between that street and the line of the new street, should be added to the width of the new street—thus making the street, immediately opposite Norfolk-street, about 120 ft. wide. It was explained that the adoption of this would avoid having to acquire trade and other premises on the north side of Holywell-street, and that certain houses facing Wych-street, within the limits of deviation and on the east and west of Newcastle-street at the northern or Wych-street end, would not be available for the purposes of recoupment; but as we were advised that the value of the premises for recoupment was about equal to the cost of their acquisition, we resolved that Mr. Pope, Q.C., should be authorised to state to the Select Committee the limits to which the amount of land to be taken for the improvement could be confined according to the plan discussed before us, and that copies of such plan should be prepared and placed before the Committee of the House."

This led to a somewhat acrimonious discussion, in the course of which Mr. Harrison was blamed by some members for the course he had taken; other members defended his action; while others, steering clear of personal references, said it would be regrettable if the Council did not get power to acquire the north side of Holywell-street, inasmuch as it would perhaps stand for years as an eyesore to what would otherwise be a great improvement.

The Water Companies and their Charges.—The Parliamentary Committee also reported as follows:—

"As instructed by the Council on the 6th inst., we have again considered the terms of the petition which we then recommended should be presented to the House of Commons, with a view to measures being taken to restrain the Water Companies from increasing their charges in consequence of increases of assessment due to the quinquennial valuations. On further deliberation we are of opinion that the petition should be confined strictly to the effect, which, in the absence of measures of restraint, the valuations must have on the power of the companies to increase their charges, and we recommend—

'That we be authorised to prepare a petition in the following terms or to the following effect—

(1.) That it is inequitable to the ratepayers of th Metropolis, and prejudicial to any future acquisition of the water supply by a municipal body, that the charges of the water companies should be increased merely by reason of any increase in the quinquennial valuation of property in the County of London.

(2.) That your petitioners, therefore, pray your Honourable House to take such measures as shall restrain the power of the water companies of the Metropolis to make an increased charge merely by reason of any increase in the quinquennial valuation of property in the County of London.'"

These recommendations were unanimously agreed to, and after the transaction of other business the Council adjourned.

NEW STREETS OBSTRUCTED BY GATES OR BARRIERS:

DAW & SON *v.* THE LONDON COUNTY COUNCIL.

AN important question was raised in this case (heard a few days ago in the Queen's Bench Division of the High Court of Justice, before Lord Coleridge and Mr. Justice Mathew) between the building owners of a new street and the London County Council, as representing the Metropolitan Board of Works upon the statutory enactments in the Metropolis Local Government Acts, which prohibit the new streets from being closed at either end by gates or otherwise. This is contrary to the common law, which allows owners to make a partial dedication of new streets or ways, and hence on many great house estates in the Metropolis there are bars put up to be closed now and then in order to prevent unlimited public rights of passage from being created. Hence the first of the Acts in question (18 and 19 Vict., c. 135) contained a clause exempting existing bars, but the latter Act (25 & 26 Vict., c. 98) provided that no existing road, passage, or way should be hereafter laid out unless 40 ft. in width, and unless open at both ends, and that any road, passage, or way hereafter laid out should be deemed to be a "new street" and subject to the by-laws made on the subject; and one of the by-laws is that "every new street shall (unless the Board otherwise consent in writing) have at the least two entrances of the full width of the street, and shall be open from the ground upwards." The question was now raised whether, under these enactments, the builders of a new street or place with homes on both sides can make it private by putting up gates at both ends, so as to prevent unrestricted traffic, and restrict the use of the way or passage of the street to the residents. The question had arisen in the present case under the following circumstances:—

The appellants were a firm of builders, of Palace-gate, Kensington, and are the owners of an estate called the Shattesbury-road Estate on the Bayswater-road. For more than eighty years previously the estate consisted of a private house and grounds, and they proposed to open a passage through from the Bayswater-road to the Moscow-road, with houses on each side, called Torwood-gardens, but with gates at each end. In order that access might be obtained to the street, gateways were made in the old wall at the Moscow-road end, and gates were placed in the gateways, which have so remained ever since, and have been locked for a time every night. There were also archways at the Bayswater-road end, between which the builders proposed to hang gates for the purpose of forming a barrier across, and excluding the public from the use of the street. The street had been thus formed and laid out without the sanction of the Metropolitan Board of Works. It was proved that the gates at the Moscow-road end of the street, known as Torwood-gardens, were kept locked at night.

It appeared that on May 23, 1889, the builders were summoned and convicted upon the complaint of the Council for that they in March last year, at Torwood-gardens, did unlawfully form or lay out a road, or passage, or way for building on a street, in breach of the by-law. Shortly after the builders had been so convicted they caused the brickwork between the pier and the arches over the footway to be removed, and there was nothing but piers left standing on the street in a line with the building line in the Bayswater-road, and between the piers there was less than 40 ft. The gates, however, were kept up, and in December the builders were summoned again for a continuing breach of the by-law—that is, for keeping the passage not open at both ends.

The magistrate considered and found as a fact that the new passage was a "new street" within the Act, and that the gates at each end of Torwood Gardens were kept locked at night, and that the police were in the habit of patrolling the said street. It was contended for the builders that they had not continued the offence of which they had been convicted, and that the street, being in all respects a private road for the use of the occupiers of the houses erected on the estate, and not having been dedicated to or used by the public, it was not formed "or laid out for building as a street, or for the purposes of carriage traffic, or for the purpose of foot traffic only" within the meaning of section 98 of 25 and 26 Vict. c. 120, and that the County Council had no power to interfere to prevent the builders from placing barriers or gates across the road for the purpose of excluding the public from using it. The Magistrate thought otherwise, and convicted, and the builders appealed.

Mr. Forbes, Q.C. (with Mr. Cunningham Glen) appeared for the appellants, the builders, and contended that there was no violation of the Act.

Mr. Avory argued for the County Council in support of the conviction.

The Court came to the conclusion on the 5th inst. that the magistrate was right, and that the conviction must be upheld.

Lord Coleridge, in giving judgment, said two points had been argued—whether the passage was a new street within the by-law and the enactment, and whether there had been a continuing offence within the Act, though perhaps only the latter question was really raised. As to the first point, however—whether this was a new street within the enactment—he thought it was. The enactment had been the subject of judicial decision in "The Metropolitan Board *v.* Stead" (8 Q. B. D.) where it was held that "or" ought to be read "and." He knew the place in question at Bayswater, and the owners thought they would build houses upon it, with access from the roads at each end. They desired to have the advantage of communication with those roads, and yet to keep it private. But if it was used so as to make it part of the great system of roads and highways all round, it must be subject to the rules and laws which bound all other owners of property so laid out, in consideration of various advantages obtained at the public expense—drainage, sewerage, &c. If the owners thus acquired the advantages of the place being part of the metropolis, they must pay the price, one part of which was that the new street must be made 40 ft. wide, and that it must be made a thoroughfare, and open to the public at both ends; the Board, however, having the power under special circumstances of granting exemption from these obligations. The owners here, however, desired to have the advantages without the accompanying burdens. They obtained, indeed, the assent of the Board to the making of the street on the condition of their fulfilling those obligations, and then they had not fulfilled them. That would not do; and even without authority he should have held that the effect of the enactment was that no passage-way should be made into a carriage-road unless open at both ends. But it appeared that the passage was left less than 40 ft. wide, and with gates at both ends. That was done without the consent of the Board or Council, and it could not legally be done. Then there had been surely a "continuing offence" within the Act, as the gates were kept up. The Magistrate, therefore, was right on both points, and the conviction was right, and must be upheld.

Mr. Justice Mathew concurred, and observed that otherwise the building-owner might always free himself from the obligations of the Act. The offence was keeping the passage obstructed by the piers and gates, and the offence was continued by keeping up these obstructions.

Appeal accordingly dismissed.

Snowdon.—As many of our readers will be aware, Sir Edward Watkin some time ago purchased a big slice of Snowdon, extending from Llyn Dinas in the valley to the summit of Snowdon. We are now informed that Mr. Thomas Roberts, C.E., of Portmadoc, is designing several "buildings and improvements" for Sir Edward, including a châlet on one of the spurs of Snowdon, which will command the grandest scenery in North Wales.

Election of a new Royal Academician.—Mr. Hubert Herkomer, A.R.A., was on Tuesday evening elected a full Academician.

BOUNDARIES TO FOOTPATHS.

Sir,—A public footpath runs between two hedges whose branches project into and obstruct the full and free use of footpath. What is the limit of ownership of the abutting land with respect to the hedges, *i.e.*, how far may the hedge legally project over the footpath beyond the roots? and, supposing a wall were erected instead of hedge, could it legally occupy a frontage line beyond the centre of hedge? If so, how far beyond? Lonsdale.

The Student's Column.

ELECTRICITY, MAGNETISM, AND ELECTRICITY SUPPLY.—XX.

SECONDARY CELLS.

A VERY common form of voltaic cell is that invented by Smee. A sheet of platinised silver is placed between two of zinc, and immersed in dilute sulphuric acid. When the poles are joined a current flows from zinc to platinum within the cell, the zinc is dissolved as sulphate of zinc, while hydrogen is liberated at the platinised plate and bubbles up out of the liquid. The chemical reactions are shown by the equation—

$$Zn + H^2SO^4 = ZnSO^4 + H^2$$

When the liquid is exhausted it must be removed and replaced by fresh acid solution. After a time the zinc plates are destroyed and must also be renewed. Such is the action of a simple type of *primary cell*.

If, however, instead of drawing off the exhausted acid solution, a current from some external source be sent through the cell from platinum to zinc, the above chemical reaction would be practically reversed:—

$$Zn\,SO^4 + H^2O = Zn + H^2SO^4 + O.$$

The zinc is recovered from the sulphate of zinc and deposited on the zinc plate, water is decomposed to supply the necessary hydrogen to form sulphuric acid, and the oxygen thus liberated rises from the platinum plate.

The cell is now in its original state, and can again furnish current. A Smee's cell which has been recharged in this latter way is a *secondary cell*. The only thing lost during the two operations is water, hydrogen during discharge, oxygen during charge; water must, therefore, be added from time to time, but, if water happened to be an expensive product, the two gases could be collected and re-formed into water by ignition.

The only essential difference between a primary and secondary cell consists, not in any detail of construction, nor in the chemical reactions which go on within it when giving current, but simply in the method of recharging. If a Smee's cell is used as a secondary cell, the zinc eventually becomes rotten and tumbles to pieces owing to its deposition being uneven over the surface of the plate.

A few only of the primary cells in common use can be used as secondary cells, and secondary cells of commercial value cannot, in practice, be charged as primary cells.

Secondary cells are frequently called "accumulators" or "storage cells"; they do not, however, "accumulate" or "store" electricity during the operation of charging, for as many coulombs come out from the negative terminal as go in at the positive. The coulombs lose potential, and the energy thus lost is left in the cell as chemical separation; what, therefore, is stored is chemical energy ready to reappear as electrical energy when required.

The materials hitherto found of most use for the construction of secondary cells are spongy lead and lead salts, with dilute sulphuric acid as the exciting fluid.

The lead secondary cell invented by Gaston Planté in 1860 has been modified by successive inventors until it has assumed the form of the cells in use at the present day.

If a current of sufficient strength be sent between two lead plates immersed in dilute sulphuric acid, water is decomposed; hydrogen is liberated at the negative plate and escapes into the air; oxygen is deposited on the positive plate, and attacking it covers it with a thin brown coating of peroxide of lead (PbO^2); this film of peroxide protects the lead beneath it from any further action, and oxygen bubbles up freely from the surface of the plate. The current must now be reversed, when the peroxide will be reduced to spongy lead and the former negative plate covered with peroxide, the object of the reversal being to form spongy lead and so increase the surface of the negative plate. The plates may now be joined; they will act as a voltaic cell, and produce a current until both plates are covered with the lower oxide (Pb O)

$$(\alpha)\quad \begin{matrix}(i)\ldots\ldots & PbO^2 + H^2 = PbO + H^2O\\ (ii)\ldots\ldots & Pb + O = PbO\end{matrix}$$

water, during discharge, oxidising the negative plate, and replacing the oxygen it has lost from that on the positive plate. In the above and following reactions there may be, and indeed probably are, certain intermediate reactions; the equations only give the final results, which are all that really concern us. As soon as the plates are exhausted a current may be sent through them in a direction opposite from that of the current they have furnished; after a time the plates will be found to have resumed their fully-charged state:—

$$(\beta)\quad \begin{matrix}(i)\ldots\ldots & PbO + O = PbO^2\\ (ii)\ldots\ldots & PbO + H^2 = Pb + H^2O\end{matrix}$$

Apart from local action, the equations for which are given below, the processes of charge (β) and discharge (α) can be repeated over and over again. It will be found, however, that the capacity of such a cell is so exceedingly small that practically it is of little value. Planté increased the capacity of his cells by leaving them fully charged for a time, sufficient to allow extensive local action between the peroxide and the lead plate to which it is attached, the cell being reversed after each period of repose, so as to make the quantity of lead actually acted upon equal for both plates. These operations, called "forming the cell," in some cases occupied many months, and the consequent expense rendered the commercial success of a Planté secondary battery out of the question.

The history of the development of the lead cell from the time of Planté to the present day is most interesting, but we must omit any account of the intermediate steps, and at once proceed to the description of the modern cell.

A mixture of lead oxides is mixed into a paste with dilute sulphuric acid, a certain amount of lead sulphate ($PbSO^4$) being formed during the process, the ingredients entering into the mixture in various proportions. The paste is pressed into the square holes of a grid, cast from a not easily oxidisable alloy of lead. The plates are put in the charging cell, when the following reactions take place:—

$$(\gamma)\quad \begin{matrix}(i) & PbO^2 & = & PbO^2\\ (ii) & PbO + O & = & PbO^2\\ (iii) & PbSO^4 + H^2O + O & = & PbO^2 + H^2SO^4\end{matrix}$$

$$(\delta)\quad \begin{matrix}(i) & PbO^2 + 2H^2 & = & Pb + 2H^2O\\ (ii) & PbO + H^2 & = & Pb + H^2O\\ (iii) & PbSO^4 + H^2 & = & Pb + H^2SO^4\end{matrix}$$

the mixtures on the positive and negative plates are converted into pellets of lead peroxide and spongy lead respectively, the holes being made of such a shape that they will not easily fall out. The liquid extends throughout the mass, which can therefore be acted upon at every point, and plates formed, the capacity of which becomes, in a few hours, greater than that of Planté plates that have taken months to form.

The chemical reactions of discharge and charge have already been given (α i, ii β i, ii). Local action, however, cannot be overlooked, and is most disastrous when the cells have completely run down.

$$(\eta)\quad PbO + H^2SO^4 = PbSO^4 + H^2O$$

Sulphuric acid is taken from the liquid, and the plates become coated with insoluble sulphate of lead which has low conducting power. On recharging, this sulphate is destroyed with some difficulty (γ *iii*, δ *iii*), and may have permanently injured the plates.

A cell should always be left fully charged, if possible; practically nothing happens at the negative plate, and although some action takes place between the peroxide and its grid,

$$(\lambda)\quad PbO^2 + Pb + 2H^2SO^4 = 2PbSO^4 + 2H^2O$$

the acid can only be renewed from the mass of the liquid by slow percolation, and the sulphate formed tends to stop further action.

The common size of grid is about 10 in. by 10 in., the thickness of plate varying somewhat, but not exceeding $\frac{1}{4}$ in. Cells contain from seven to thirty-one such plates, according to the storage capacity required, placed alternately positive and negative and connected abreast into these two groups, so that each plate exposes about 200 square inches of surface, while separated from a plate of opposite kind by the thickness only of thin strips of insulatim. The internal resistance of a cell is, therefore, as low as a thousandth of an ohm

or less, and if it be short-circuited it will discharge at the enormous rate of over a thousand ampères, the actual rate depending, of course, upon the size and number of the plates. This power of yielding an enormous current must not be supposed to be a peculiar property of the lead secondary cell, for if any of the common forms of primary cell, which do not polarise, were given an equal area of plate and the opposite plates placed equally near one another it would give similar results.

A secondary battery is a most valuable adjunct to a continuous current dynamo-machine, but its use is limited by its liability to rapid decay, unless placed in the hands of a skilled attendant, though much may be done by automatic arrangements Under favourable circumstances, a good battery will last for years, but, unless carefully looked after, the positive plates bulge, the grids are damaged, and the pellets fall out, while, if left uncharged for any length of time, an entire set of cells may be completely ruined.

RECENT PATENTS.

ABSTRACTS OF SPECIFICATIONS.

7,592, Plasterers' Lath. A. J. Hogan.

This invention consists in bevelling each edge of the lath the reverse way, so that when the plaster is applied it will form a dovetail-shape key, each lath being also a dovetail shape.

8,230, Improved Wind-guard for Chimneys. K. Edge.

According to this invention, a funnel-shaped piece, with the bell upwards, is placed upon the top of the chimney-pot, and allowed to be moved sideways, so as to prevent the wind catching the smoke, and inducing up-draught.

8,511, Compounds for Bricks, Tiles, &c. E. Bussy.

According to this specification, bricks, tiles, architectural ornaments, &c., are made of a peculiar combination of common yellow and calcareous clay, and a white enamelled surface is gained by using these clays in combination with metallic oxides in adjusted proportions.

9,103, Ventilating Rooms and Baths, &c. D. P. Menzies.

This invention proposes to force a jet of steam into a ventilating shaft, so as to cause an up-draught and to carry off foul or impure air.

13,957, Artificial Stone. B. Bertelmeyer.

In making artificial stone, the cement, sand, &c., are, according to this invention, exhausted by means of an air-pump, and mixed with air-exhausted water. This exhaustion renders the mass homogeneous, and improves the quality of the product.

19,246, Hearths of Fireplaces. J. Wilson.

To prevent fires from over-heating, a cast-iron cantilever is, by this invention, laid across the wall below each jamb, according to the size of fireplace. A front plate is also fixed and bolted; a false-bottom is fitted below this, and the space filled up to the top of the metals with concrete. Tiles are laid over, if wished.

2,619, Flooring. J. Schultz and E. Hopf, Hamburg.

According to this invention, on a concrete layer or boarding are fastened two or more layers of carton-pierre, or roofing paper, by means of mastic cement or pitch. After the layers of carton-pierre have been pressed firmly together, by the application of rollers or other means of giving pressure, the surface of the upper layer is covered with mastic cement or pitch, and then with rough slabs or artificial stones. The combined use of slabs and carton-pierre is the main point of the invention.

NEW APPLICATIONS FOR PATENTS.

April 28.—6 413, W. Junge, Saws.—6,423, J. Kaye, Door-indicator.—6,429, J. T. and J. Kiars, Baker's Ovens.—6,461, W. Jones. Chimney-cowl.

April 29.—6,548, W. and H. Stephens, Appliance for Forcing Drains, Water-closets, &c.—6,578, W. Thompson, Construction of Buildings.—6,586, W. Pavey, Water Waste-preventer for Cisterns.

April 30.—6,616, T. Hughes, Door-closer.—6,619, J. Dart, Fastenings for Doors.—6,637, C. Edwards, Manufacture of Bricks.

May 1.—6,720, G. Clarke, Setting Saws.

May 2.—6,747, C. Elliott, Ventilating Rooms, &c.—6,783, T. Tyerman, Window-fastenings.—6,784, A. Smith, Bolts for Doors, Windows, &c.—6,805, W. Thompson, Paints, Varnishes, &c.

May 3.—6,844, O. Gray, Drain and Sewer-traps.—6,845, G. Drake, Combination Chimney-top.—6,848, R. and W. Thomason & Sons, Valveless Syphon-flushing Cisterns of Water-closets.—6,850, E. Perry and H. Foskett, White Pigment.—6,855, G. Higham, Portland Cement.—6,856, H. Tuke, Metal-plates used in the Manufacture of Bricks Tiles, &c.—6,880, M. Hellinger, Construction of Wall for Buildings.—6,892, J. Stidder, Fitting Windows, Doors, &c., rendering them air and water-tight.

PROVISIONAL SPECIFICATIONS ACCEPTED.

3,266, B. Townson and J. Dixon, Horizontal Sawing Machines.—3,592, C. Darrah, Water-waste Preventing Cisterns for Water-closets, &c.—4,368, J. Pullan and others, Brickmaking and Pressing Machines.—4,373, A. Molloy, Chimney-pots.—4,579, A. Harris, Drain-pipes, &c.—4,785, A. Stalker and T. Daye, Valves for Water-closets.—5,082, J. Watkins, Hinge or Fastener.—5,104, H. Lever, Sash Fastener.—5,105, H. Lever, Fastening for Window Sashes.—5,555, J. Benson, Ventilating Rooms and Buildings.—5,719, W. Taylor, Manufacture of Cement.—5,807, W. Odlin, Square Bevel and Set Mitre.

COMPLETE SPECIFICATIONS ACCEPTED.

Open to Opposition for Two Months.

9,011, J. Downes, Chimney Top for Preventing Down Draught.—10,000, S. Deards, Glass Roofs and Skylights.—1,185, C. Hunter, Extracting Cowl.—4,783, S. Groff, Screw-nail.

RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

May 2.—By G. B. SMALLPEICE (at Woking).

Maybury-hill, Woking—F. cottage and garden, r. £7. 16s.	£140

May 5.—By BENINGFIELD, TIDY, & CO.

Watford—"Beech Lodge" and 6 acres, u.t. 10 yrs., g.r. £41. 9s. 9d.	1,570

By VAUGHAN & CO.

Wandsworth—2, Ashen-villas, f.	505

By DRIVER & PERFECT.

Holloway—5, 7, and 9, Pakeman-st., u.t. 67 yrs., g.r. £19. 10s.	640
Shepherd's Bush—14, Macfarlane-rd., u.t. 84 yrs., g.r. £4. 10s., r. £36	200

By W. SUTHERLAND.

Dorset-sq.—31a and 32a Edward-st., u.t. 30 yrs., g.r. £14. 14s.	515

By BUCKLAND & SONS.

Notting-hill—20, 22, and 24, St. Lawrence-road, u.t. 73 yrs., g.r. £24	1,145

May 6.—By W. & F. HOUGHTON.

Walthamstow—"Ruggle's Cottage," f., r. £15. 12s.	290
F. house in Shern Hall-st.	280

By E. MILLARD.

Hackney—46 and 48, Weymouth-rd., f., r. £72 p.a.	1,090
Tottenham, Willoughby Pk.—"Beulah House," f.	400
"Amershaw Lodge," f.	405
Hoxton—L.g.r. of £48 p.a., u.t. 37 yrs.	1,000

By GIDDY & GIDDY.

Cheshunt, near—The f. house "Paradise," and 3¼ acres	800

By E. WOOD.

Peckham—129, 131, and 133, Gordon-rd., u.t. 76 yrs., g.r. £14. 10s.	555
Leyton Manor-rd.—"Kauri Villa," u.t. 90 yrs., g.r. £8, r. £24	200
Lewisham—55, Elswick-rd., u.t. 67 yrs., g.r. £4, r. £24	250

By ROGERS, CHAPMAN, & THOMAS.

Enfield—The f. residence "Carlton House"	1,239
An enclosure of f. land, 3a. 0r. 23p.	480
An enclosure of c. land, 1a. 0r. 32p., and lodge..	1,430
St. Luke's—F.g.r. of £6, with reversion in 23 yrs..	195
Golden-lane—F.g.r. of £40 p.a., with reversion in 82 yrs.	1,100
F.g.r. of £90 p.a., with reversion in 81 yrs.	1,970

May 7.—By WALTON & CO.

Hyde Pk.—70, Gloucester-ter., u.t. 48 yrs., g.r. £2, r. £210	2,905
76 and 102, Gloucester-ter., u.t. 48 yrs., g.r. £14, r. £360	5,050

By H. GRIFFIN.

Clapham—70 and 72, Pk.-rd., f., r. £60 p.a.	1,260
91 and 93, Pk.-rd., f., r. £95 p.a.	1,750
Crescent-rd.—F.g.r. of £20. 5s., with reversion in 59 yrs	511
Park-cres.—F.g.r. of £8, with reversion in 60 yrs.	211

By F. JOLLY & CO.

Wandsworth—4, Salscott-rd., f.	400
Bethnal-green—72 and 74, Cyprus-rd., u.t. 12 yrs., g.r. £4, r. £59. 16s.	185
Commercial-rd., E.—44 to 50 (even), Hardinge-st., u.t. 14 yrs., g.r. £14	300
56 to 62 (even), Hardinge-st., u.t. 14 yrs., g.r. £14	305

May 8.—By GLOVER & HARRISON.

Fulwell—1 to 4, Coburg-villas, f., r. £62. 8s.	650

By C. C & T. MOORE.

Bow—177 to 183 (odd), Campbell-rd., u.t. 73 yrs., g.r. £17. 10s.	1,200
Buckhurst Hill—1 and 2, Talbot Villas, f.	975
Victoria-pk.—22, 23, and 25, Morpeth-rd, u.t. 36 yrs., g.r. £12. 18s., r. £79. 4s.	440
Old Ford—58, 60 and 62, Milton-rd., u.t. 867 yrs., g.r. £9, r. £78	500
Mile End—123, St. Dunstan's-rd., u.t. 73 yrs., g.r. £3. 3s., r. £34. 16s.	260
49, White Horse-lane, f.	295

By E. STIMSON.

West Ham—15 and 16, Park-rd. f.	580
Camberwell—72, Camberwell New-rd., u.t. 11 yrs., g.r. £7, r. £38	110
Peckham—59, 61, and 63, Bell's Garden-rd., and 1 to 23 (odd), Goldsmith-rd., u.t. 47 yrs., g.r. £6, r. £328. 18s.	2,280

By FAREBROTHER, ELLIS, & CO.

Fleet-st.—No. 190. f., area 1,200 ft.	12,500
Abbots Langley, Hunton Bridge Wharf, a cottage and 2½ acres, f.	2,400

By NEWBON & HARDING.

Canonbury—19, Sebon-st., u.t. 28 yrs., g.r. £5, r. £28	205
Highbury—32, Horsell-rd., u.t. 96 yrs., g.r. £7 15s., r. £40	350

By WORSFOLD & HAYWARD (at Dover).

Dover—4, 17, 25, 34, and 35, Tower Hamlets-st., f.	£555
1, Ethelbert-rd., f.	56
Three plots of f. land	550

May 9.—By PRICKETT & VENABLES.

Hornsey-lane—97, Cheverton-rd., f.	790
Stockwell—58 & 62, Santley-rd, u.t. 85 yrs., g.r. £12, r. £60	490

By J. T. WOOLLEY.

Sandown, I.W.—The Residence "Shelthorpe," g.r. £15	790

By W. HALL.

Stamford-hill—67, Daleview-rd., u.t. 80 yrs., g.r. £6, r. £31. 4s.	200

By WINCH & SONS.

Hawkhurst, Kent—The Residence "Pixhall," and 225a. 3r. 16p., f.	4,500

F. W. GLAZIER.

South Lambeth-rd.—f.g.r. of £57 p.a., with reversion in 77 yrs.	1,230
f.g.r. of £15. 10s. p.a., with reversion in 77 yrs.	404
Westminster—65, Vincent-sq., u.t. 15 yrs., no g r, r. £45, and the reversionary interest in the lease of £64	260

By E. WOOD.

Upper Clapton—1 to 7 (odd), Inver-rd., u.t. 89 yrs., g.r. £20	700
17 and 19, Inver-rd., u.t. 89 yrs., g.r. £10, r. £57. 4s.	350
Willesden—12, Belton-rd., f., r. £30	400
East Dulwich—3, Ardsley-ter., u.t. 85 yrs., g.r. £5, r. £33. 16s.	675

[*Contractions used in these lists.*—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.]

MEETINGS.

SATURDAY, MAY 17.

Royal Institution.—Dr. Charles Waldstein on "Recent Excavations in Greece." II. 3 p.m.

St. Paul's Ecclesiological Society.—Visit to the Church of St. Peter-ad-Vincula and the Chapel of St. John in the Tower.

Association of Municipal and Sanitary Engineers and Surveyors.—Midland Counties' District Meeting at Hereford.

MONDAY, MAY 19.

Royal Institute of British Architects.—Mr. Frank Granger, M.A. Lond., on "German Technical Museums." 8 p.m.

Victoria Institute.—Mr. W. N. Whitley, C.E., on "Flint Implements and the Antiquity of Man." 8 p.m.

TUESDAY, MAY 20.

Royal Institution.—Mr. Louis Fagan on "The Art of Engraving." III. 3 p.m.

Institution of Civil Engineers.—Messrs. Fawcus and Cowan on "The Keswick Water-Power Electric Light Station." 8 p.m.

Society of Arts (Foreign and Colonial Section).—Mr. Lasenby Liberty on "The Industrial Arts of Japan." 5 p.m.

Royal Society of Antiquaries of Ireland.—Ordinary General Meeting to be held in the Town Hall, Kilkenny, when nine papers will be submitted, including (*a*) "The Cistercian Abbey of Kilcooley, Co. Tipperary," by the Rev. W. Healy; (*b*) "Record of the Great Pestilences in Ireland," by Mr. John M. Thunder; (*c*) "Some Remarks on the Seal of the Dean and Chapter of St. Patrick's Cathedral, Dublin," by Mr. John Vinycomb. 2 p.m.

WEDNESDAY, MAY 21.

The Auctioneers' Institute (Cannon-street Hotel).—Ordinary General Meeting. 3 p.m.—Annual Dinner, Cannon-street Hotel. 5 p.m.

Royal Meteorological Society.—Three papers will be read. 7 p.m.

Society of Arts.—Mr. J. G. Gordon on "The Mannesmann Process for making Seamless Tubes." 8 p.m.

British Archæological Association.—(1) Mr. W. J. Davis on "An Early Inscribed Altar Slab at Sheepscombe." (2) Mr. E. P. Loftus Brock, F.S.A., on "Recently Discovered Saxon Architecture at Stevington Church, Beds." 8 p.m.

Committee for Testing Smoke-Preventing Appliances.—Meeting at the Mansion House. 3 p.m.

THURSDAY, MAY 22.

Architectural Association Lyric Club.—Exhibition of Drawings, &c. (Ladies' Night). 8 p.m.

Royal Institution.—Professor Dewar, M.A., F.R.S., on "Flame and Explosives." III. 3 p.m.

Institution of Electrical Engineers.—8 p.m.

SATURDAY, MAY 24.

Royal Institution.—Dr. Charles Waldstein on "Recent Excavations in Greece." III. 3 p.m.

Association of Public Sanitary Inspectors.—Fifth Annual Provincial meeting to be held at Leamington, when the President, Sir Edwin Chadwick, K.C.B., will deliver an address.

Edinburgh Architectural Association.—Visit to Bridge Castle and Torphichen Church.

The Royal South London Ophthalmic Hospital.—The Prince of Wales has intimated his intention of laying the foundation-stone of the new building for the Royal South London Ophthalmic Hospital at St. George's-circus, Southwark, in July.

Miscellanea.

Liverpool Engineering Society. — The fourteenth and concluding meeting of the present session of this Society was held on Wednesday evening, May 7, at the Royal Institution, Colquitt-street, Mr. Henry H. West, M. Inst. C.E., President, in the chair. The ballot for officers for the ensuing session resulted in the election of Mr. F. Hudleston, Assoc.-M. Inst. C.E., as President; Messrs. John T. Woode and James Morgan, as Vice-Presidents; Mr. J. H. T. Turner, B.Sc., Assoc.-M. Inst. C.E., as hon. secretary; Mr. O. S. Pilkington, Assoc.-M. Inst. C.E., as hon. treasurer; and Mr. J. A. Brodie, Assoc.-M. Inst. C.E., as hon. librarian. Mr. Henry H. West, the retiring president, in announcing the result of the ballot to the meeting, congratulated the members upon the growth and vigour of the Society. There were now 190 members of all classes on the books, and the income for the past financial year had amounted to 150*l*. Being in this strong financial position, the Council had felt justified in making a new departure in the past session by printing and issuing the papers read to members prior to the date of the discussion of the papers. The result had been to add greatly to the interest and value of the discussions, and the Council felt that the result justified the additional outlay involved. The forthcoming volume of the Society's proceedings was now in proof, and would shortly be issued to members. The importance of the Society was considered to warrant the presence of the President of the Institution of Civil Engineers, among other guests, at the annual dinner held in January last. Mr. West then announced that arrangements would be made for excursions during the summer to the Thirlmere Aqueduct, Manchester Ship Canal Works, Menai Straits, Forth Bridge and Edinburgh Exhibition, Liverpool Overhead Railway Works, and the Lancashire & Yorkshire Railway Works at Horwich. The adjourned discussion upon Mr. Thomas L. Miller's paper, entitled "The Efficiency of Gas Engineers," concluded the business.

The English Iron Trade.—For the last three weeks the English iron market has displayed a steadily downward tendency, and the volume of business transacted has been on a correspondingly dwindling scale. The reports received during that time with regard to pig-iron have been very discouraging, and the fall in prices has been marked. No. 3 Cleveland pig was pretty steady at 45s. 6d. until this week, when it has dropped 2s. 6d. a ton, and is now quoted 43s. to 43s. 6d. Glasgow warrants have run their usual course of fluctuation since we last wrote, but they are at the end of the present week not much below what they were three weeks ago. Scotch makers' iron, on the contrary, shows declines varying from 6d. to 3s. 6d. per ton. Although makers of Bessemer pig in the north-west are nominally but 3s. lower (60s., compared with 63s.), the fact appears to be that they are quoting down to hematite warrant prices, which are from 53s. 6d. to 54s. In other districts the rates now quoted are proportionately lower. Old materials may be had 5s. a ton cheaper, while spiegeleisen registers a similar decline. The demand for finished iron and steel has not revived, and lower values are the rule. For manufactured iron from 5s. up to 20s. less per ton is now accepted. In steel, similar reductions in price have been made. Tin-plates have given way to the extent of but 6d. a box, but they are now firmer. Shipbuilders have still cause to complain of the absence of new orders, while engineers are booking but little fresh work.—*Iron.*

The North Sea-Baltic Canal.—We are now able to state on good authority that the number of cubic mètres of ground which have to be moved before the completion of the canal is 8,000,000, and that the work will take five and a-half years. Up to date some 11,000,000 cubic mètres have been removed, the present state of affairs permitting a movement of about 1,000,000 mètres a month, which figure will, however, advance to one and a-half to two millions as soon as "full work" is being done. It may be of interest to know that the construction of the locks on the canal will alone require 130,000 cubic mètres of "beton." The total of the estimate shows a figure not much under 8,000,000*l*.

The Surveyors' Institution.—The Annual Dinner of this Institution is fixed for Monday, June 2, at the Holborn Restaurant.

Proposed National School of Forestry.—On the 9th inst., a deputation from the Associated Chambers of Commerce waited upon Mr. Chaplin (with whom was Sir James Caird) at the offices of the Board of Agriculture, in St. James's-square, for the purpose of urging upon him the desirability of establishing a National School of Forestry.—Col. Hill, M.P., introduced the deputation, and addressing Mr. Chaplin, said those who were with him desired to point out that the growing of timber as an industry might be most usefully extended in this country, especially in view of the timber supply from abroad becoming more and more diminished. They recommended therefore that her Majesty's Government should establish a National School of Forestry, which would be an encouragement not only to the planting of Crown lands with trees, but would also induce private landowners to utilise ground which was at present of little or no service in the same direction.—Mr. G. Harper next spoke, and said he had received letters approving of the objects of the deputation from Lord Basing, official Verderer of the New Forest, Sir Edward Lechmere, and other gentlemen. He further pointed out that with the exception of Spain this was the only country of any position that did not possess a National School of Forestry. England was the greatest timber-buying nation in the world, and at present imported annually something like 13,000,000*l*. worth of that commodity. There was a vast acreage of land now lying waste in this country which might, were the proper instruction forthcoming, be used for timber-growing, and practically enable it to produce all the timber it required. Mr. Chaplin said there could be no doubt of the growing interest and importance of the question under discussion. The purport of the remarks he had heard seemed to be that his department should establish a National School of Forestry. He desired, however, to point out that the Act under which that department was instituted provided only for its inspecting and reporting upon schools which provided education either upon agriculture or upon forestry. So far as he could see, his department had no power to institute a school, but he would consider the matter very carefully with a view to seeing if he could recommend such a course to the Government.

Camden Park Estate, Chislehurst.—This historic property, including Camden-place and a finely-timbered park of about 125 acres, fronting the common, will be sold at the Mart, in the course of next month, for building purposes. The house was built by the antiquarian, Camden, who died there in 1623. It gave a title to Charles Pratt, who, on July 16, 1765, being then Chief Justice of the Common Pleas, was elevated Lord Camden, and as Lord Chancellor was advanced Earl Camden. He sold it to a Mr. Lushington, who sold it to Mr. Bonar, who, with his wife, was murdered here by a footman in 1813. It then passed into the occupancy of Prince Esterhazy, the Austrian Ambassador. Camden-place is better known, perhaps, as the home for some years of the late Emperor Napoleon III. and his Consort. He died here on January 9, 1873. His remains (since removed to Farnborough) were buried in St. Mary's Catholic Church, in a side chapel built by the Empress, after the designs of Mr. H. Clutton, architect. Their son, the Prince Imperial, was buried in that same chapel, on July 12, 1879. The late Mr. N. W. Strode lent the house to the royal exiles. The furniture, &c., including some valuable Flemish tapestry, was sold in June last. Chislehurst village was the birthplace of Sir Francis Walsingham and of Sir Nicholas Bacon, Lord Keeper.

Association of Municipal and Sanitary Engineers and Surveyors.—The following gentlemen, having satisfied the examiners at the examination held in London on the 18th and 19th ult., have been granted certificates of competency by the Council of the Association, viz., Messrs. J. H. Catchpole, Hendon; L. Gibbs, Walsall; J. E. Miller, Durham; and J. W. Wood, Rochdale. The next examination will be held in London on October 3 and 4.

Surveyorship, Burton-on-Trent.—Mr. J. E. Swindlehurst, Assoc.-Mem. Inst. C.E., Engineer and Surveyor to the Rawtenstall Local Board District, and late Deputy Borough Engineer of Barrow-in-Furness, was last week elected by the Council to the office of Borough Engineer and Surveyor of Burton-on-Trent, at a salary of 400*l*. per annum, with a horse and trap provided by the Corporation. There were 107 candidates for the appointment.

The Erosion of our Coast-line.—On Monday evening last, at the Surveyors' Institution, London, Mr. R. F. Grantham, M.Inst.C.E., read a paper entitled, "The Encroachment of the Sea on some parts of the English Coast, and the best means of arresting it." After bringing forward evidence to show the rate of erosion on several parts of the coast, the paper referred to various works for defending the coast-line from encroachment best adapted for various situations, and described a system of groyning which was stated to have been successful for the past twelve years at Shoreham, Sussex, in protecting some land lying below the level of high-water of the tides, and in driving high-water mark further seawards. The paper suggested that in some instances where shingle travelled along the coast, inasmuch as groynes were necessary to protect sea-walls, the sea-walls might be omitted, and only groynes erected, and thus a substantial saving in the first cost of protection might be effected.

PRICES CURRENT OF MATERIALS.

TIMBER.	£.	s.	d.	£.	s.	d.
Greenheart, B.G. ....ton	6	10	0	7	10	0
Teak, E.I. ....load	11	0	0	14	0	0
Sequoia, U.S. ....foot cube	0	2	3	0	3	0
Ash, Canada....load	3	0	0	4	10	0
Birch ,, ...	3	0	0	5	0	0
Elm ,, ...	3	10	0	4	15	0
Fir, Dantsic, &c....	1	15	0	3	10	0
Oak ,, ...	2	10	0	4	10	0
Canada	5	10	0	6	10	0
Pine, Canada red	2	10	0	3	10	0
,, yellow	2	0	0	5	5	0
Lath, Dantsic....fathom	5	0	0	6	0	0
St. Petersburg	5	0	0	7	0	0
Wainscot, Riga, &c. ....log	0	0	0	0	0	0
Deals, Finland, 2nd and 1st. std. 100	7	10	0	10	0	0
,, ,, 4th and 3rd	7	0	0	7	10	0
Riga	6	0	0	8	10	0
St. Petersburg, 1st yellow	9	10	0	14	0	0
,, 2nd ,, ...	7	10	0	9	0	0
,, white	6	10	0	10	0	0
Swedish	7	0	0	15	10	0
White Sea	8	0	0	17	0	0
Canada, Pine, 1st	15	0	0	26	0	0
,, ,, 2nd	10	0	0	16	10	0
,, ,, 3rd, &c.	7	0	0	10	0	0
,, Spruce, 1st	8	15	0	11	0	0
,, ,, 3rd and 2nd ..	6	10	0	8	10	0
New Brunswick, &c.	6	0	0	8	0	0
Battens, all kinds	5	0	0	16	0	0
Flooring Boards, sq., 1 in., prepared, First	0	10	0	0	14	0
Second	0	8	0	0	10	6
Other qualities	0	6	0	0	7	9
Cedar, Cuba ....foot	0	0	4	0	0	4½
Honduras, &c.	0	0	4	0	0	4½
Mahogany, Cuba....	0	0	4½	0	0	6½
St. Domingo, cargo average ..	0	0	5	0	0	6½
Mexican ,, ...	0	0	4½	0	0	5½
Tobasco ,, ...	0	0	5½	0	0	6½
Honduras ,, ...	0	0	5½	0	0	6½
Box, Turkey ....ton	4	0	0	13	0	0
Rose, Rio	14	0	0	20	0	0
Bahia	13	0	0	18	0	0
Satin, St. Domingo....foot	0	0	6	0	1	3
Porto Rico	0	0	9	0	1	3
Walnut, Italian	0	0	4	0	0	7
METALS.						
Iron—Bar, Welsh, in London tn	6	17	6	8	0	0
,, ,, at works in Wales	6	10	0	7	0	0
,, Staffordshire, in London..	8	0	0	8	10	0
Copper—British, cake and ingot	56	0	0	57	0	0
Best selected	58	10	0	59	10	0
Sheets, strong	0	0	0	0	0	0
Chili, bars	53	0	0	0	0	0
Yellow Metal....lb.	0	0	5½	0	0	0
Lead—Pig, Spanish ....ton	12	7	6	13	0	0
English, com. brands	13	2	6	0	0	0
Sheet, English, 3 lbs. per square foot and upwards....	15	0	0	0	0	0
Pipe	15	10	0	0	0	0
Tin—						
Straits	95	0	0	0	0	0
Australian....	95	0	0	0	0	0
English Ingots....	98	0	0	0	0	0
OILS.						
Linseed ....ton	24	0	0	24	5	0
Cocoanut, Cochin	29	0	0	0	0	0
Cocoanut, Ceylon	25	10	0	0	0	0
Palm, Lagos	25	10	0	25	15	0
Rapeseed, English pale	32	10	0	0	0	0
,, brown	31	0	0	0	0	0
Cottonseed, refined	22	10	0	0	0	0
Tallow and Oleine	21	0	0	40	0	0
Lubricating, U.S.	5	10	0	6	0	0
,, refined....	7	0	0	12	0	0
Tar—Stockholm....barrel	1	5	6	0	0	0
Archangel....	0	16	9	0	0	0

TENDERS.

[Communications for insertion under this heading must reach us *not later than* 12 *noon on Thursdays.*]

ARNOLD (Notts).—For improvements in Wood-street and West-street, Arnold, for the Arnold Local Board of Health. Messrs. F. Jackson & Son, engineers, Nottingham:—

Holms Bros.	£265 0 0
W. Cordon	259 19 0
A. Wayle	245 0 0
John Greaves	243 0 0
John Holmes	231 17 7
John Hawley & Son, Ilkeston*	211 17 4

* Accepted.

CONTRACTS AND PUBLIC APPOINTMENTS.

Epitome of Advertisements in this Number.

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.	Page.
Infectious Wards in connexion with workhse	Pontypridd Union	Seward & Thomas	May 20th	ii.
Tramp Wards do. do.	do.	do.	do.	xii.
Works at Cemetery, Ilford	Com. of Sewers	*Official*	do.	ii.
Erection of Schools	Acton School Board	E. Monson, Jun.	May 22nd	xii.
Roadmaking Works	Twickenham Local Bd.	H. M. Ramsay	do.	xii.
Completion of River Embankment, &c.	do.	do.	do.	xii.
County Court and Police Buildings	West Bromwich Corp.	Wood & Kendrick	May 23rd	xii.
Poor Asylum, Isle of Man			May 24th	xiii.
Cast-iron Pipes	Tadcaster R.S.A.	Brundell, Simmons & Co.	do.	xii.
Limestone Tar Paving	East Grinstead L. B.	W. W. Gale	May 26th	xii.
Painting, &c., Works	St. Giles & Bloomsbury Guardians	*Official*	May 27th	xii.
Additions to G. P. O., West	Com. of H.M. Wks. &c.	do.	do.	ii.
Roadmaking Works	Willesden Local Board	O. Claude Robson	do.	xii.
Wood Paving Works	Fulham Vestry	J. P. Norrington	May 28th	ii.
Alteration to old and Erection of New Tanks Buildings, &c.	Tonbridge Local Board	Chatterton & Bazalgette	May 29th	xii.
Painting and other Works, S. W. Hospital	Met. Asylums Board	Keith D. Young	do.	xii.
Flood Works	Leicester Corporation	E. G. Mawbey	May 30th	xii.
Pumping Machinery	Thetford Town Council	*Official*	May 31st	xiii.
Limestone Paving	Birmingham Public Wks Committee	W. S. Till	do.	xiii.
Purchase and taking down Curtain Wall	York County Com.		June 2nd	xii.
Retort House, Coal Stores, Chimney, &c. &c.	Cromer Gas, &c. Co. Lim.	Jabez Church	do.	xii.
Road Materials	Toxteth Park Loc. Bd.	Jno. Price	do.	xii.
Enlargement of Colchester P.O.	Com. of H.M. Works	*Official*	June 3rd	xii.
Reparation and Cleansing of Sewers	Com. of Sewers	do.	do.	xii.
Shops	Sherness Co-operative Society	J. F. Goodey	June 4th	xii.
Painting Works	St. Leonard (Shoreditch) Guardians	F. J. Smith	do.	xii.
Painting Works, Highbury Fields	London County Council	*Official*	June 10th	xii.
Four New Houses and Alterations, Norfolk	Admiralty	do.	June 13th	ii.
Barrack Huts and Quarters, Shorncliffe Cmp	War Department	do.	Not stated	ii.
Painting, &c., Works, Aldershot District	do.	do.	do.	ii.
Painting, &c., Works, Plymouth Sub-Dist.	do.	do.	do.	xii.
Painting Works, Portsea Sub-District	do.	do.	do.	ii.
Enlarging Laundry, Woolwich	do.	do.	do.	ii.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.	Page.
Inspector of Pavements	Com. of Sewers	£150	May 23rd	xvi.
Temporary Surveyor's Assistant	Harrogate Corporation	£2 per week	May 26th	xvi.
Borough Surveyor, &c.	Hertford Corporation	£250	May 27th	xvi.

BEDDGELERT (North Wales).—For the erection of farm buildings on the Hafod-y-Llan estate, for Sir Edward Watkin, Bart. (owner providing timber and slate). Mr. Thomas Roberts, Assoc.-M.Inst. C.E., architect:—

Griffith Roberts, Penmorfa, and William Jones, Portmadoc (accepted)	£334 0

BISHOPSTON (Somerset).—For erecting new vicarage. Mr. John Bevan, architect, 4, Unity-street, College-green, Bristol:—

		Credit old materials.
W. Podger	£2,450 0 0	£150 0 0
W. Cowlin & Son	2,169 0 0	—
James Wilkins	2,100 0 0	51 0 0
E. Love	2,075 0 0	100 0 0
J. Perrott	2,021 0 0	70 0 0
J. Perkins	1,999 0 0	100 0 0
King & Son	1,998 0 0	70 0 0
W. Church	1,993 0 0	150 0 0
Stephens & Bastow	1,986 0 0	50 0 0
E. Walters	1,975 0 0	100 0 0
Tambling Bros	1,945 0 0	40 0 0
J. E. Davies	1,944 0 0	132 0 0
A. G. Forse	1,880 0 0	170 0 0
E. T. Hatherley	1,857 0 0	200 0 0
R. Wilkins & Son (accepted)	1,783 0 0	150 0 0

BRISTOL.—For new building for the "Volunteer" Inn, Horfield, near Bristol, for Messrs. D. Sykes & Co., Limited. Mr. John Bevan, architect, 4, Unity-street, College-green, Bristol:—

J. Perkins	£3,460 0 0
W. Cowlin & Son	3,393 0 0
James Wilkins	3,367 0 0
Stephens & Bastow	3,118 0 0
E. T. Hatherley	2,987 0 0
R. Wilkins & Sons (accepted)	2,804 0 0

BRISTOL.—For alterations and additions to St. Silas' Schools, Bristol. Mr. John Bevan, architect, 4, Unity-street, College-green, Bristol:—

R. E. Creedy	£590 0 0
E. Love	585 0 0
J. Perkins	580 0 0
Cowlin & Son	575 0 0
E. Walters	525 0 0
Tambling Bros.	515 10 0
A. G. Forse	500 0 0
Messrs. R. Wilkins & Sons	494 0 0
W. Church	493 0 0
James Wilkins	480 0 0
C. A. Hayes	477 0 0
Albert Wilkins	463 0 0
Wilson & Powles	347 0 0

FARNBOROUGH.—For rebuilding the "Cambridge" Hotel, Farnborough, Hants (recently destroyed by fire), for Messrs. C. Hammerton & Co. Mr. Stanley Parker, architect:—

Prestige & Co.	£1,912 0 0

CARDIFF.—For alterations to and enlargement of the "Royal Hotel," Cardiff, for the Directors of the Cardiff Royal Hotel Company, Limited. Quantities by the architect, Mr. J. P. Jones, 27, Park-street, Cardiff:—

C. Burton, Cardiff	£22,937 0 0
Shepton & Son, Cardiff	20,800 0 0
D. J. Davies, Cardiff	20,600 0 0
J. Allan, Cardiff	20,550 0 0
Jones Bros., Cardiff	20,500 0 0
Stephens & Bastow, Bristol	20,499 0 0
F. S. Lock, Cardiff	20,397 0 0
Bowers & Co., Hereford	20,377 10 0
David Davies, Cardiff	20,313 0 0
W. Thomas & Co., Cardiff	19,900 0 0
Shepherd & Son, Cardiff*	19,470 0 0
Turner & Sons, Cardiff	18,672 0 0
Reed, Blight, & Co., Plymouth	18,274 0 0

* Accepted conditionally.

HUMBERSTONE (Leicester).—For the making up of ten roads in New Humberstone, for the Billesden Union Rural Sanitary Authority. Mr. William F. Ault, surveyor, 57, Green-lane, North Evington:—

Stirling & Swann, Manchester	£5,000 0 0
W. T. Hall, Rugby	4,925 0 0
J. Lea, Leicester	4,190 0 0
W. Cordon, Nottingham	4,136 0 0
Hutchinson & Son, Leicester	4,109 0 0
T. Philbrick, Leicester	4,061 0 0
J. Mason, Humberstone	4,030 0 0
Geo. Law, Kidderminster	4,027 0 0
S. & E. Bentley, Leicester*	3,945 0 0
T. Gibbins, Leicester	3,931 0 0
W. Todd, Derby	3,925 16 9

* Accepted.

HUMBERSTONE (Leicester).—For the construction of surface water-drains, connexions, &c., for the Billesdon Union Rural Sanitary Authority. Mr. J. B. Everard, M. Inst. C.E., Engineer, 6, Millstone-lane, Leicester:—

Stirling & Swann, Manchester	£2,563 0 0
Botterill & Co., London	1,661 0 0
W. Todd, Derby	1,557 8 4
S. & E. Bentley, Leicester*	1,456 0 0
T. Philbrick, Leicester	1,421 0 0
Geo. Law, Kidderminster	1,315 0 0

* Accepted.

LONDON.—For the erection of a school, &c., to provide accommodation for 800 children on the site in Ancona-road, Plumstead, for the School Board for London. Mr. T. J. Bailey, architect:—

	If brickwork is built in cement.
Patman & Fotheringham	£16,327 .. £16,526
Colls & Son	16,295 .. 16,465
Thomas Boyce	16,237 .. 16,442
Dove Brothers	16,118 .. 16,301
B. E. Nightingale	16,082 .. 16,239
Jno. Grover & Son	15,903 .. 16,098
E. Lawrance & Sons	15,871 .. 16,074
Jno. Mowlem & Co.	15,730 .. 15,870
Killby & Gayford	15,615 .. 15,806
Stephens, Bastow, & Co.	14,689* .. 14,812†

* This amount was erroneous. It should have been £15,389.

† This amount was also erroneous. It should have been £15,512. The Works Committee have recommended that the last-named (corrected) tender should be accepted.

LONDON.—For the enlargement of the Hatfield-street School, Stamford-street, Blackfriars, by 120 places, and for providing a covered playground for boys underneath the new portion of the building, for the School Board for London. Mr. T. J. Bailey, architect:—

	If brickwork is built in cement.
A. & W. Garnar	£2,399 .. £2,434 0 0
Dove Bros.	1,945 .. 1,986 0 0
Jno. Marsland	1,935 .. 1,968 0 0
Lathey Bros.	1,924 .. 1,964 0 0
Jas. Greenwood & Son	1,877 .. 1,903 10 0
J. Tyerman	1,867 .. 1,908 0 0
Wm. Downs	1,760 .. 1,780 0 0
Stephens, Bastow, & Co.*	1,738 .. 1,754 0 0

* Recommended by the Works Committee for acceptance.

LONDON.—For works at No. 73, Bateman-street, Soho. Mr. H. Huntly-Gordon, architect:—

	General works.	W. party wall.	Total.
E. Toms	£1,462	£127	£1,589
J. W. Falkner	1,378	109	1,487
F. & H. Higgs	1,335	145	1,480
D. Charteris	1,327	100	1,427
Lawrance & Sons	1,278	122	1,400
W. Shurmur	1,285	110	1,395
Kirby & Chase	1,230	120	1,350
W. Scrivener	1,201	135	1,336
W. & F. Crocker	1,133	110	1,243

LONDON.—For rebuilding Nos. 67 and 69, City-road, for Mr. T. Hayward. Mr. R. W. Hobden, architect:—

Richardson	£2,068 0 0
Little	1,847 0 0
F. & F. J. Wood	1,793 0 0
Eaton & Co.	1,775 0 0
B. Cook	1,690 0 0
Consell Bros.	1,664 0 0

LONDON.—For alterations, repairs, &c., to No. 71, Lancaster-gate, W. Mr. W. Jacomb Gibbon, architect, 36, Great James-street, Bedford-row, W.C.:—

E. L. Nunn	£1,074 0 0
Macfarlane Bros.	1,072 0 0
Vare Bros.	1,038 10 0
H. Chapman	1,016 5 0
Foxley & Co. (accepted)	1,006 7 0

LONDON.—For the erection of a new wing to "The Mansion," Frognal, Hampstead, for Mr. Alexander Gray. Mr. James Neale, F.S.A., architect, 10, Bloomsbury-square, London, W.C.:—

Neave & Neave, St. John's Wood	£1,750 0 0
Allison & Foskett, Hampstead*	1,743 15 0

* Accepted.

[These tenders do not include stoves, mantelpieces, heating apparatus, painting, and decoration.]

LONDON.—For the construction of new roads, drainage, &c., for the extension of Kensal Green Cemetery, London. Mr. F. A. R. Willey, architect and surveyor, 66, Ludgate-hill, E.C.:—

Richard Ballard	£1,749 0 0
Joseph Mears	1,678 0 0
John Mowlem & Co.	1,673 0 0
James Pizzey	1,666 0 0
Nowell & Robson	1,663 0 0
C. Rogers & Co. (accepted)	1,639 0 0

LONDON.—For the erection of a new American organ factory at Camden-place, N.W., for Messrs. A. & E. Humphreys. Mr. E. Stone, architect, 19, Berners-road, Wood Green, N.:—

W. Keen	£1,027 0 0
W. Tout	905 0 0
Niel	898 0 0
Churchen	894 0 0
James Webb	849 0 0
Snewin Bros. & Co.	846 0 0
Cox & Parsons	831 17 0
J. R. Hunt	830 0 0
Wall Bros.	827 0 0
Scharien & Co.	786 0 0
R. G. Battley	779 0 0
H. M. Dove	775 0 0
W. Evans (accepted)	763 16 10
J. Poulton	761 5 10½

LONDON.—For sundry painting and distempering works, &c., at Chelsea Barracks, for H.M. War Department:—

W. Buckeridge, Kensington*	£991 0 0

* Accepted.

LONDON.—For alterations, repairs, &c., to No. 18, Devonshire-terrace, Hyde Park, W. Mr. W. Jacomb Gibbon, architect, 36, Great James-street, Bedford-row, W.C.:—

Vare Bros.	£645 0 0
H. Chapman	598 0 0
Macfarlane Bros.	507 0 0
E. L. Nunn (accepted)	456 0 0

LONDON.—For alterations and repairs at No. 65, Watling-street, for the purpose of forming offices for Messrs. Langton & Son, solicitors. Mr. Walter J. Ebbetts, architect, Savoy House, No. 115, Strand, W.C.:—

W. Smith (accepted)	£269 0 0

LONDON.—For alterations and additions to Atlas Works, Hackney Wick, for Messrs. Brooke, Simpson, & Spiller, Limited:—

W. Shurmur (accepted)	£396 0 0

LONDON.—For the erection of five warehouses, with a floor-space of 93,000 ft., for Mr. J. T. Morton, under the superintendence of Mr. W. Eve, 10, Union-court, E.C.:—

Harris & Wardrop, Limehouse (accepted on schedule of prices).

LONDON.—For sundry repairs, painting, &c., at 12, Southwold-road, Upper Clapton. Mr. M. Bradbear, architect:—

Sharp	£110 15 0
Snewin Bros.	96 15 0
Rowlinson	79 0 0
Steel	72 10 0

LONDON. — For sundry works at the Licensed Victuallers' Schools, Kennington. Mr. Geo. Treacher, architect :—

Walker Bros.	£347	0	0
B. Cook	323	0	0
Crabtree	320	0	0

NEWBURY (Berks).—For additions and alterations to Dean Wood, near Newbury, for Mr. H. T. Caine. Mr. W. E. Mills, architect, 64, Cannon-street, E.C. :—

Maides & Harper, Croydon	£9,520	0	0
W. P. Adey, Newbury	8,775	0	0
Lascelles & Co., London	8,660	0	0
Bottrill & Son, Reading	7,859	0	0
Parnell & Son, Rugby	7,774	0	0
J. S. Kimberley, Banbury	7,497	0	0

READING.—For the erection of a house at Prospect Park, Reading, for Mr. G. Philbrick. Messrs. Newman & Newman, architects, 31, Tooley-street, London-bridge. Quantities by Mr. G. Fleetwood :—

J. A. Hunt, London	£4,216	0	0
J. K. Coleman, London	3,848	0	0
Collier & Catley, Reading	3,804	0	0
Higgs & Sons, Reading	3,513	0	0
Balaam Bros., London	3,509	0	0
Bottrill & Son, Reading	3,483	10	0

READING.—For new "Thames-side Hotel," Caversham, for Mr. H. Dunlop. Mr. Geo. W. Webb, architect, Market-place-chambers, Reading :—

Strong Bros., Reading	£3,410	0	0
Silver & Sons, Maidenhead	3,285	0	0
Collier & Catley, Reading	3,269	0	0
G. S. Lewis, Reading	3,225	0	0
G. Wernham, Reading	3,190	0	0
G. Seale, Reading	3,168	0	0
J. H. Margetts, Reading	3,097	0	0
Bottrill & Son, Reading	3,075	0	0
Kingerlee, Oxford	3,075	0	0
Higgs & Son, Reading	2,999	0	0
W. H. Simonds	2,992	0	0

READING —For new stables, &c., Coley-avenue, for Mr. J. N. Pocock. Mr. Geo. W. Webb, architect, Reading :—

Collier & Catley	£398	0	0
Higgs & Son (accepted)	389	0	0
Searle	385	0	0
G. Lewis	375	0	0
Margetts	366	0	0
Bottrill & Son	360	0	0

[All of Reading.]

SANDHURST.—For bakehouse, stables, &c., for Mr. F. Parkes. Mr. Geo. W. Webb, architect, Reading :—

G. Searle, Reading (accepted)	£144	0	0

SOUTHBOROUGH.—For levelling, paving, &c., the roads on the Holden Park Estate, for the Southborough Local Board. Mr. W. Harmer, surveyor :—

Botterill & Co., London	£4,495	0	0
Thomas Adams, Kingsland	3,842	13	0
John Jarvis Tunbridge Wells	3,631	14	1
Edward Punnett, Tunbridge	3,298	15	9
Strange & Sons, Tunbridge Wells	3,261	18	0
E. & W. Iles, Wimbledon	3,175	18	3
William Gillett, Bidborough	3,154	13	0
A. W. & J. Porter, Lower Clapham	3,107	7	1

TOTTENHAM. — For alterations and additions to offices at the Lager Beer Brewery, Tottenham. Mr. Charles Dunch, architect :—

		Deduct for Bath stone.	Net.
Nightingale	£1,650	£25	£1,625
Harris & Wardrop	1,674	57	1,617
Greenwood	1,647	34	1,613
Gentry	1,630	28	1,602
Ashby & Horner	1,609	29	1,580
J. Morter	1,620	51	1,569
Chappell	1,559	34	1,525
Laurence & Son	1,526	48	1,478
Shurmur	1,395	45	1,350
J. Curnow	1,240	—	1,240

WALTHAMSTOW.—For new organ-chamber, and decorating, at Wood-street Chapel, Walthamstow. Mr. A. Goodchild, architect :—

Bosley & Son	£230	0	0
W. Shurmur	198	0	0
S. Howe	183	15	0
E. Fuller	172	13	3
E. Good	170	2	11
S. J. Scott	125	0	0
Barrett & Power (accepted)	121	5	0
J. A. Reed	115	9	11
C. E. Penn	114	12	6

WALTHAMSTOW.—For new pulpit and reseating at Wood-street Chapel, Walthamstow. Mr. A. Goodchild, architect :—

J. A. Reed	£357	11	2
W. Shurmur	330	0	0
E. Fuller	325	19	0
Lascelles	307	0	0
G. M. Hammer	282	15	0
E. Good	264	4	6
S. J. Scott	263	8	0
Barrett & Power (accepted)	198	18	6

WHITCHURCH.—For additions to Hawthorne Cottage for Mr. H. B. Blandy. Mr. Geo. W. Webb, architect, Reading :—

G. Lewis, Reading (accepted)	£200	0	0

WOKINGHAM.—For the erection of a house, for Capt. Gregory. Mr. W. Ravenscroft, architect, Reading :—

Bottrill & Son	£3,357	0	0

[No Competition.]

WRAYSBURY.—For addition to the "Old Ferry House," for Mr. H. Glave. Mr. G. W. Webb, architect, Reading :—

S. Roberts, Colnbrook	£325	0	0
J. A. Baker, Staines (accepted)	281	0	0

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TO CORRESPONDENTS.

E. S. E.—C. F. M. (a letter of that kind should be addressed to a daily paper, not to a technical journal. It may give some information there; it can give none to our readers).—S (you give no information as to the present construction of ceiling and floor, which might have enabled us to say what could be done. If it is an ordinary jolsted floor, hollow between ceiling and floor boards, a filling of slag wool could be put in by taking up the boards: that would probably have the desired effect).—B. & Son (copy illegible).—F. R. F. (thanks).—C. H.—T. C.—H. Y. & Co. (next week).—J. H. (ditto).—E. S. (ditto).—Several items of news crowded out this week.

All statements of facts, lists of tenders, &c. must be accompanied by the name and address of the sender, not necessarily for publication.

We are compelled to decline pointing out books and giving addresses.

NOTE.—The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors.

We cannot undertake to return rejected communications.

Letters or communications (beyond mere news-items) which have been duplicated for other journals, are NOT DESIRED.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; all communications relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and *not* to the Editor

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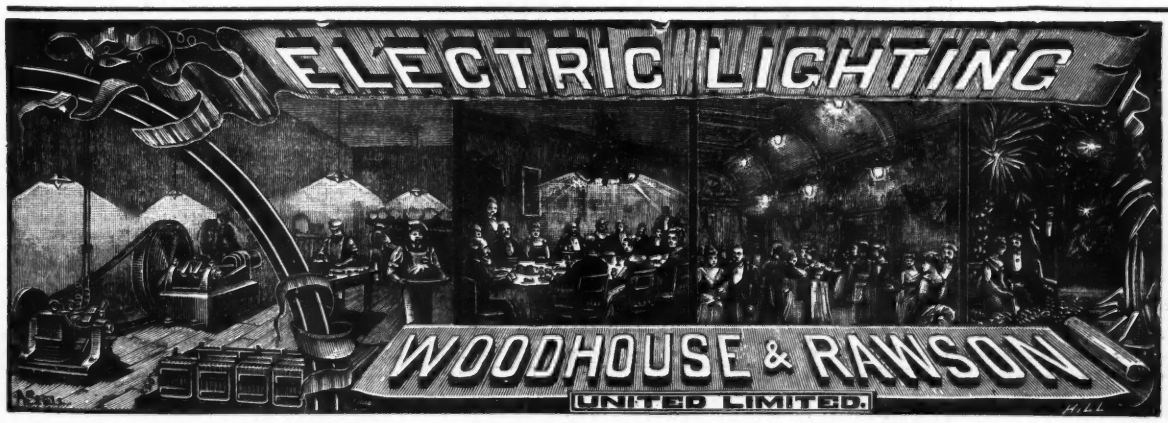

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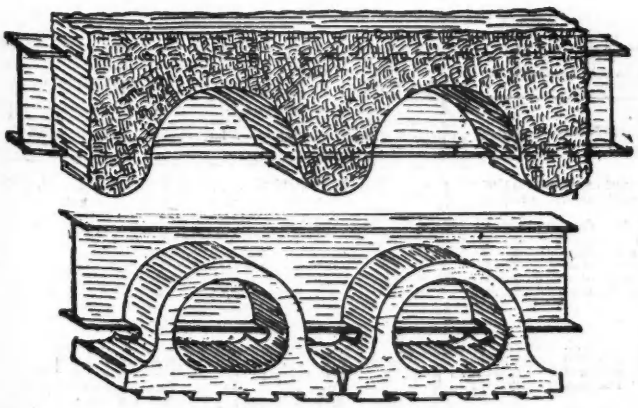

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Advertisements for the current week's issue must reach the Office before THREE o'clock p.m. on THURSDAY, but those intended for the front Page should be in by the same hour on WEDNESDAY.

SPECIAL.—ALTERATIONS IN STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same must reach the Office before TEN o'clock on WEDNESDAY mornings.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, &c. left at the Office in reply to Advertisements, and strongly recommends that of the latter COPIES ONLY should be sent

PERSONS Advertising in "The Builder" may have *Replies addressed to the Office,* 46, Catherine-street, Covent Garden, W.C *free of charge.* Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage.

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THIRTY-SECOND SESSION.
Chairman—JAMES EDMESTON, Esq. F.R.I.B.A.
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LECTURE, May 15th, at Eight o'clock p.m. by Phil. R. Morris, Esq. A.R.A. Subject. "Impressionism, Realism, and Philistinism, in Painting," with limelight illustrations.

THIRD CONVERSAZIONE, June 5th. at the R. I. Painters in Water Colours, Piccadilly. Musical Artistes: Miss Marie de Lido, Miss Grace Damian, Miss Marianne Eissler (violin), and Miss Clara Eissler (harp).

Annual Subscription (1*l.* 1*s.*) paid by Members joining now will cover the next Session.

E. P. LOFTUS BROCK, F.S.A. Hon. Secretary.

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Admission by Ticket (free), to be obtained at the HALL; or will be sent by post, if desired, on receipt of an addressed envelope.

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Pursuant to the Statute 22 and 23 Victoria Chapter 35 Notice is hereby given that all CREDITORS and others having any claims or demands against the estate of the late ALEXANDER MACKINTOSH of Westcombe Park Villas Blackheath in the County of Kent and of No 13 formerly 7 Westminster Chambers Victoria Street in the City of Westminster Esquire Civil Engineer deceased (who died on the 23rd day of March 1890 at Westcombe Park Villas Blackheath aforesaid and whose Will was proved in the Principal Registry of the Probate Division of Her Majesty's High Court of Justice on the 26th day of April 1890 by John Hay Grant of Westcombe Park Villas aforesaid of The Bombay Civil Service Esquire one of the Executors therein named) are hereby required to send in particulars of their respective claims and demands in writing to Messrs. Rowcliffes Rawle & Company of 1 Bedford Row London Solicitors on or before the 9th day of June 1890, after which day the said Executor will proceed to distribute the estate of the said deceased among the persons entitled thereto having regard only to the debts, claims, and demands of which he shall then have received notice and the said Executor will not be liable for the assets so distributed or any part or parts thereof to any person or persons of whose debts claims and demands he shall not then have had notice. Dated this 1st day of May 1890
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Solicitors for the said Executor

CHARITY COMMISSION.
In the Matter of the Charity called ROBERT ASKE'S HOSPITAL at Hoxton, in the Parish of Shoreditch St. Leonard, in the County of London,
and
In the Matter of the "The Charitable Trusts Acts, 1853 to 1887."

By direction of the Board of Charity Commissioners for England and Wales,

Notice is hereby given that the Governors of the Charity propose to grant a BUILDING LEASE of the property mentioned in the subjoined Schedule for a term of 81 years from the 24th of JUNE, 1890, at an annual rent of 175*l.* for the first year, and 360*l.* during the remainder of the term, the Lessee agreeing to pull down the existing buildings, and to erect Artizans' Dwellings on the property at a cost of not less than 20,000*l.*

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Any objection or suggestion relative to the proposed Lease may be transmitted to the Commissioners in writing within 21 days from the first publication of this notice, addressed to "The Secretary, Charity Commission, Whitehall, London, S.W."

Dated the 7th day of May, 1890.

D. R. FEARON, Secretary.

SCHEDULE.

A piece of land containing 23,000 sq. ft. or thereabouts, forming the sites of the messuage known as Haberdashers House, situate on the West-side of and numbered 55 in Pitfield-street, and the two messuages situate on the North-side of and numbered 59 and 75, Buttesland-street, all in Hoxton.

INSPECTOR of PAVEMENTS.
The Commissioners of Sewers of the City of London hereby give notice that they have a vacancy for an Inspector of Pavements, Salary, 150*l.* a year, with uniform.

Candidates must have been accustomed to works of building, understand building materials, be able to measure superfices, and to square up and abstract dimensions, and must write a fair hand.

Applications in candidates' own handwriting, addressed to the undersigned, with copies of testimonials, must be delivered at this office on or before FRIDAY, the 23rd MAY, 1890, at TWELVE o'clock noon precisely.

The person elected must give up his whole time to the duties of the office, and will be subject to annual election.

By the City Sewers' Act, 1848, each Inspector is required to reside within the District to which he is appointed.

A General Statement of the Duties may be seen at this Office.

HENRY BLAKE,
Principal Clerk.

Sewers' Office, Guildhall,
May 5th, 1890.

BOROUGH of HARROGATE.
TO SURVEYORS' ASSISTANTS.
The Harrogate Corporation require a TEMPORARY ASSISTANT, to complete the Survey of the Borough. Candidates must have had experience in Town Surveying.

Salary 2*l.* per week.

Applications, stating age and experience, with copies of two testimonials, to be sent to The Chairman of the Highways Committee, Municipal Offices, Harrogate, not later than TEN a.m. on the 26th inst.

SAMUEL STEAD,
Borough Surveyor.

Municipal Offices,
Harrogate, May 13th, 1890.

BOROUGH OF HERTFORD.
IN THE COUNTY OF HERTFORD.
WANTED, A BOROUGH SURVEYOR AND INSPECTOR OF NUISANCES.

The Corporation of the Borough of Hertford REQUIRE a SURVEYOR and INSPECTOR of NUISANCES for the Borough.

The person appointed must devote the whole of his time to the discharge of the duties of the offices, and will not be allowed to engage in private practice.

The salary will be 250*l.* per annum, and offices with fire and light will be provided, rent and rates and taxes free.

The Borough Surveyor must provide at his own expense all clerical assistance necessary to enable him to properly fulfil the duties of his office. He will be required to enter upon his duties on the 24th of June next.

The population of the Borough was at the last census 7,747, and the acreage is 816 acres, the length of highways in the Borough is 9 miles 1,197 yards.

The Corporation are the owners of the waterworks, and treat the sewage of the town by a chemical process at their sewage works.

Applications in the applicant's own writing, stating age, present occupation, and past experience, accompanied by not more than three testimonials, to be sent to me on or before the 27th day of MAY next. Applicants are requested to send twenty-five printed copies of their applications and testimonials, marked on the envelope "Borough Surveyor."

The Corporation do not bind themselves to appoint any applicant. The appointment will be made subject to the approval of the Local Government Board so far as the office of Inspector of Nuisances is concerned.

A statement of the duties of the offices and other particulars can be obtained on application to me the undersigned,

CHARLES ELTON LONGMORE,
Town Clerk.

May 8th. 1890.

Town Clerk's Offices, Hertford, Herts.

DRAUGHTSMAN WANTED, Well skilled in Constructional Iron Work, for a period of about three months. Salary 4*l.* per week. None but experienced men need apply.—Write, enclosing copies of testimonials, to "D. D. 577," Messrs. Deacon's Leadenhall-street, E.C.

DRAUGHTSMAN WANTED. Able to prepare sketches and full-size details of Mosaic. State age, experience, and salary required.—Address, Box 257, Office of "The Builder."

ASSISTANT.—WANTED, for an Architect and Surveyor's office in South Africa, a thoroughly qualified Assistant. Particulars on applying by letter to E. B., 683, Messrs. Deacon's, Leadenhall-street, E.C.

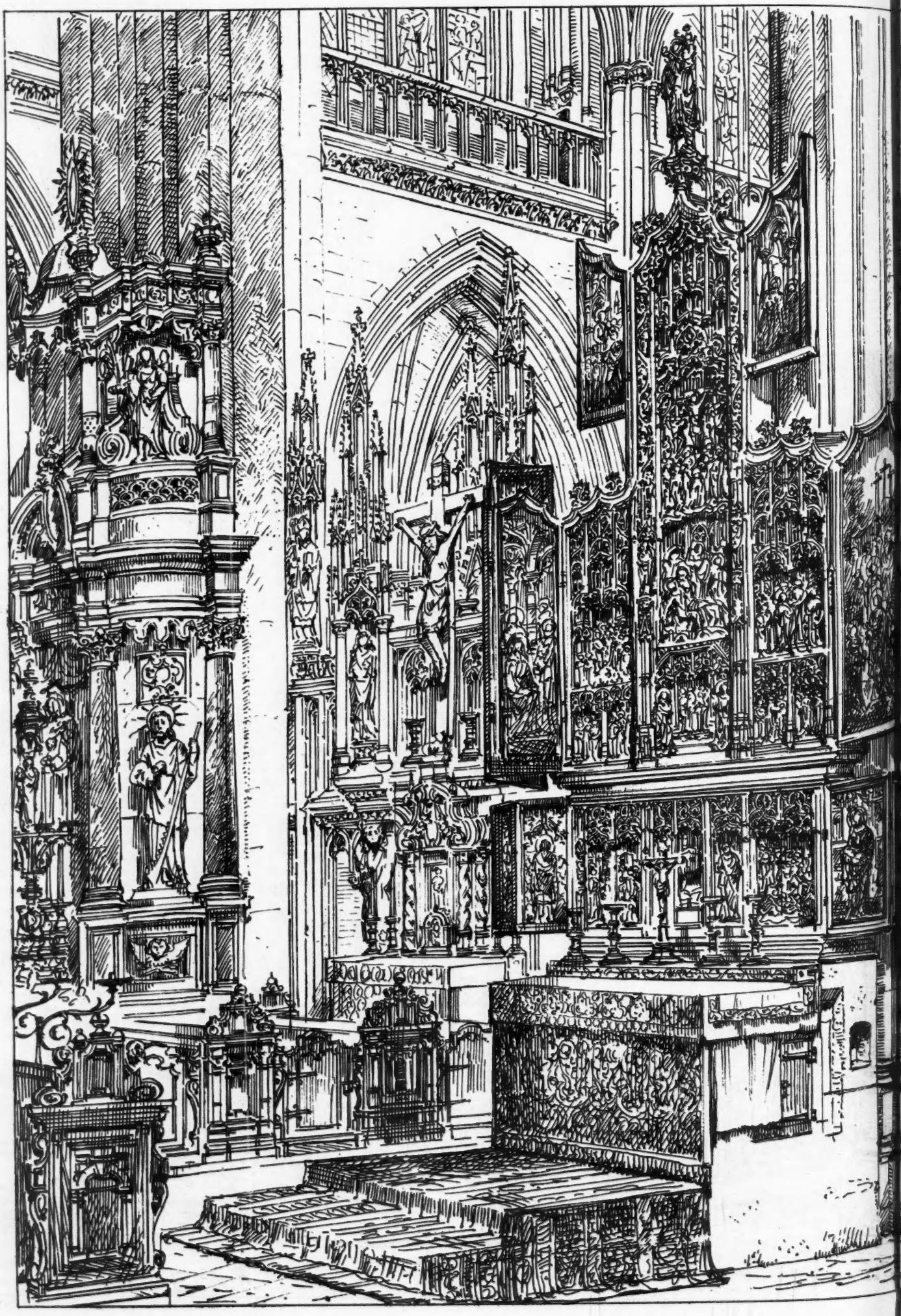
PAVING INSPECTOR REQUIRED, by Corporation of Carlisle. Must have had previous experience. One with knowledge of building inspection preferred.—Apply with full particulars, stating age and salary required, CITY ENGINEER, Town Hall, Carlisle.

CONTRACTOR'S AGENT WANTED, for Reservoir and Drainage work. Must have had previous experience and charge of men.—Write, with full particulars as to past occupation, stating salary required, to Box 251, Office of "The Builder."

TOWN TRAVELLER WANTED, to take, on commission, with other goods, a new and valuable Sanitary Appliance. An established connexion necessary among Architects and the Building Trades.—Address, with references, Box 254, Office of "The Builder."

THE BOROUGH SURVEYOR of Harrogate has a VACANCY in his office for a young Gentleman as ARTICLED PUPIL.—Further particulars can be obtained on application to Mr. SAMUEL STEAD, Borough Engineer and Surveyor, Municipal Offices, Harrogate.

AN ENGINEER and SURVEYOR to a rapidly increasing district near London, who is now carrying out extensive works, has a vacancy for a PUPIL.—Address Box 210, Office of "The Builder."



ALTARS IN THE SOUTH AISLE ST.

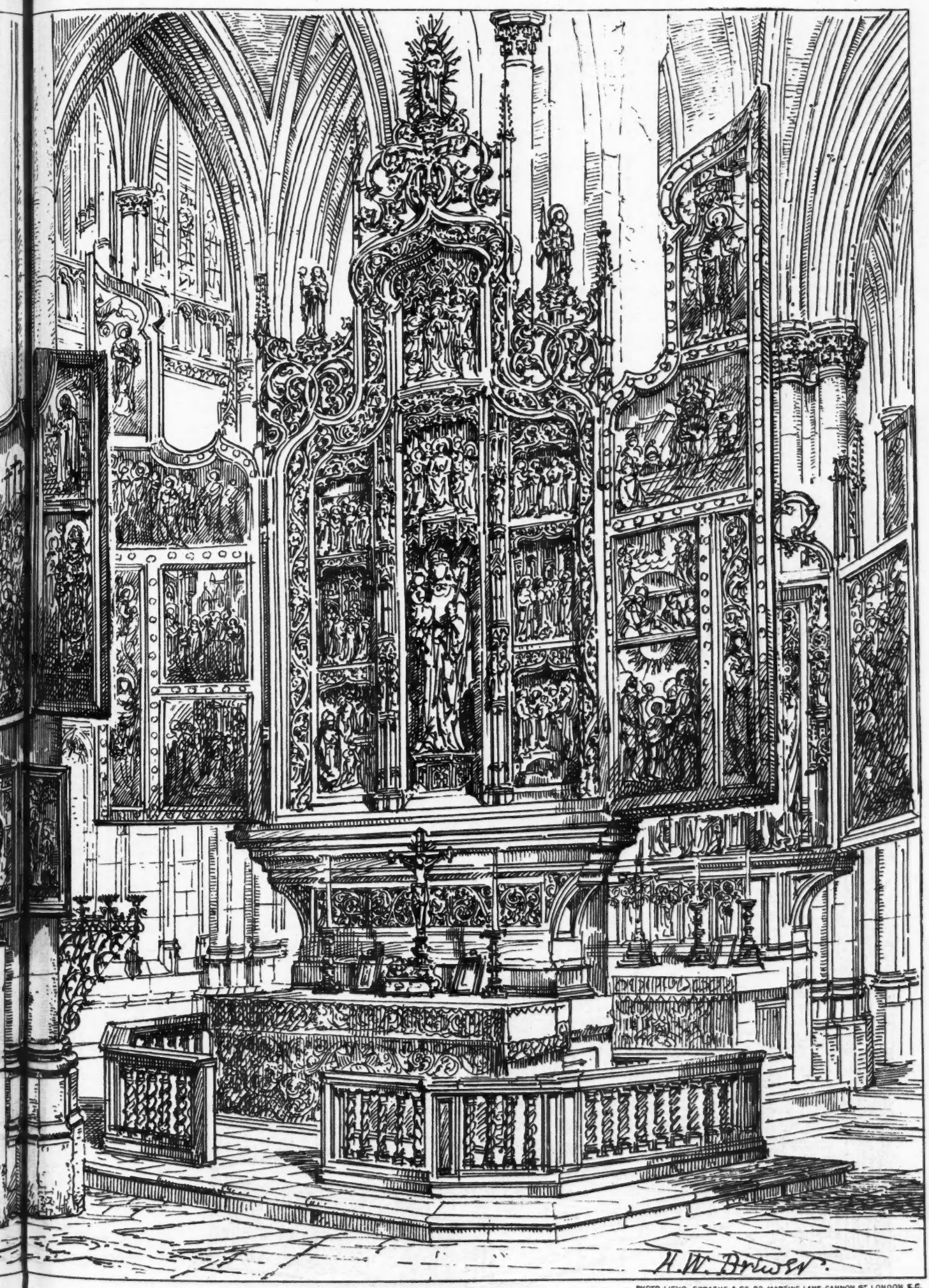
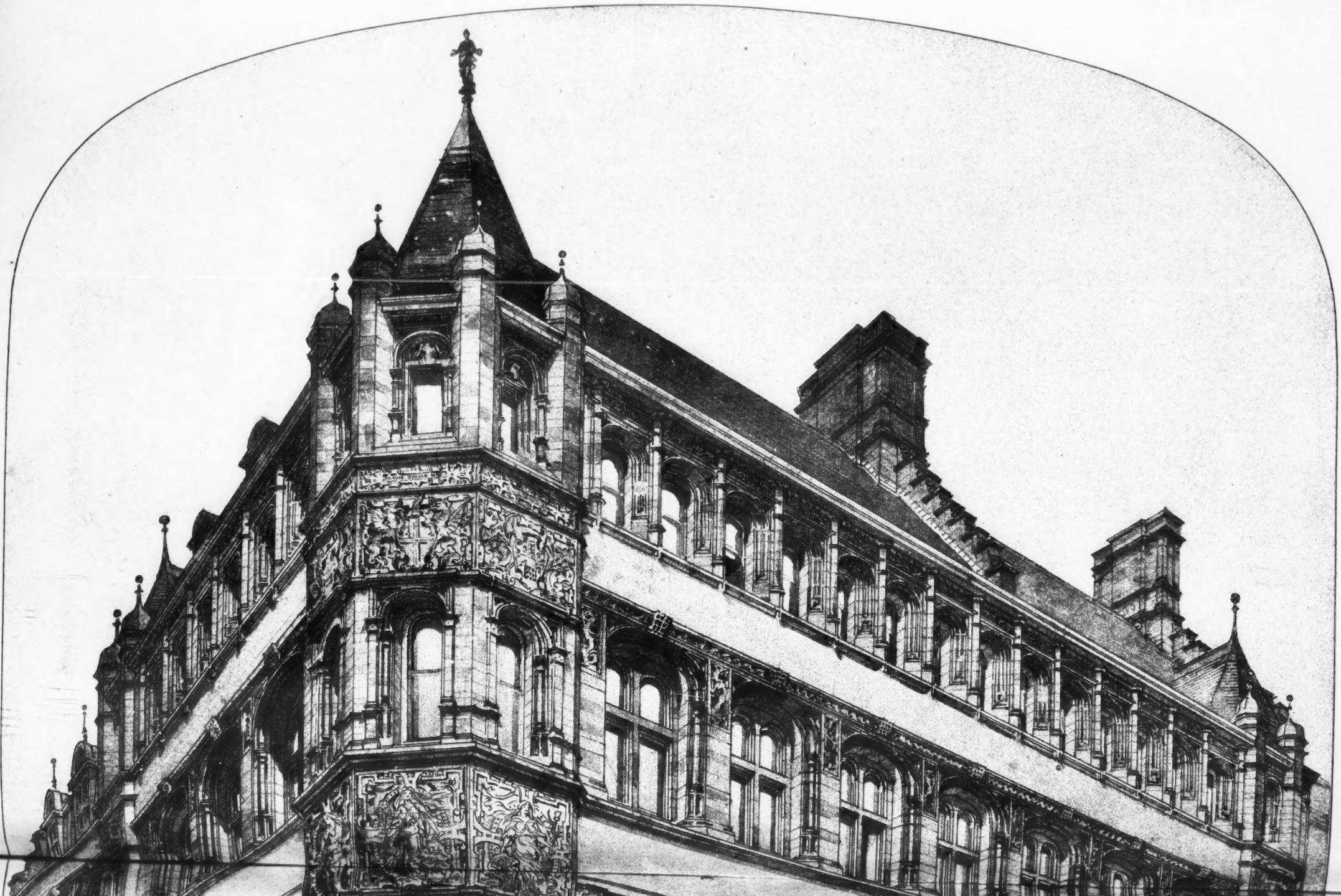
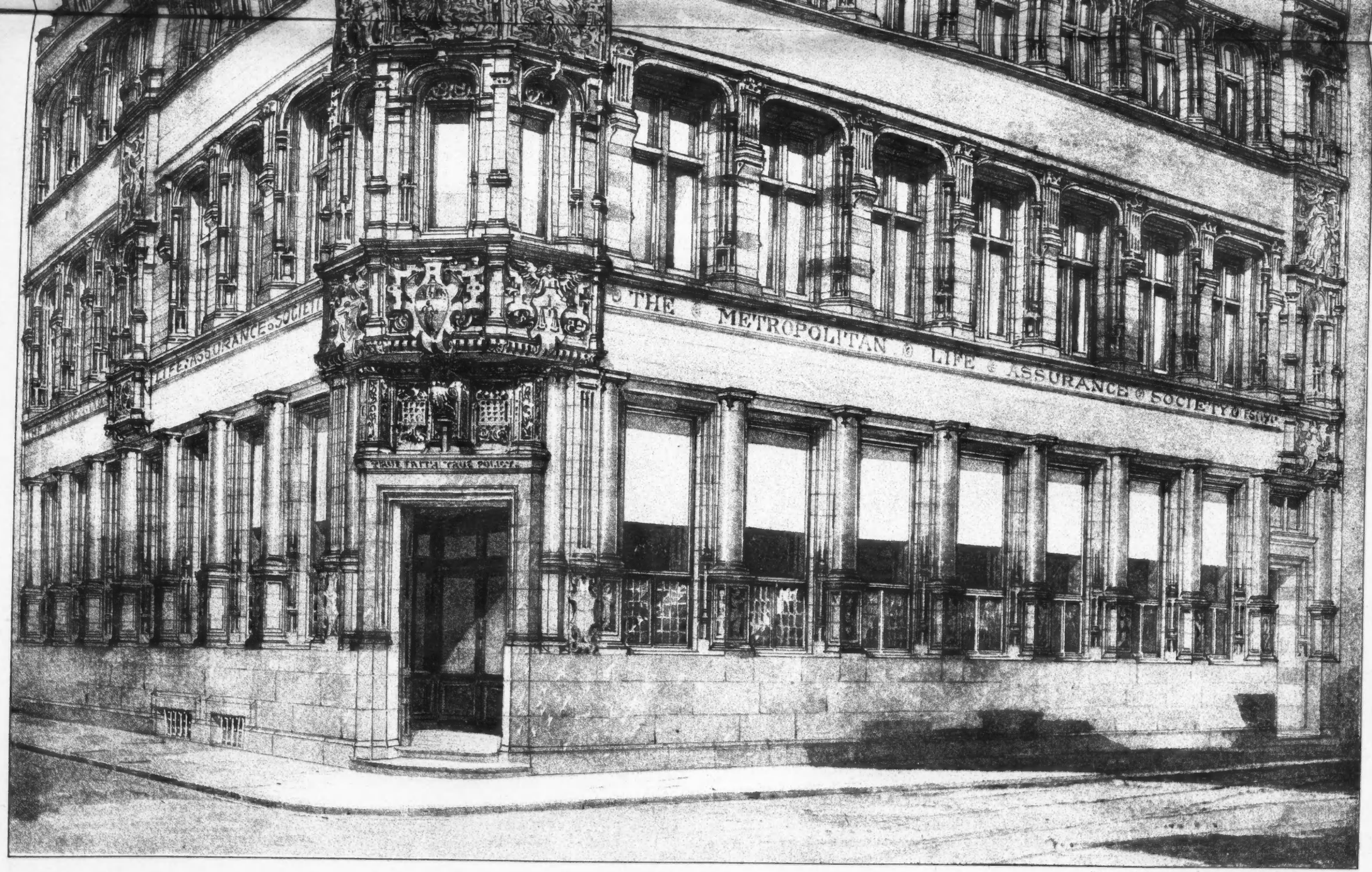


PHOTO-LITHO. SPRAGUE & Co 22, MARTINS LANE, CANNON ST, LONDON, E.C.

ST. VICTOR, XANTEN, GERMANY.





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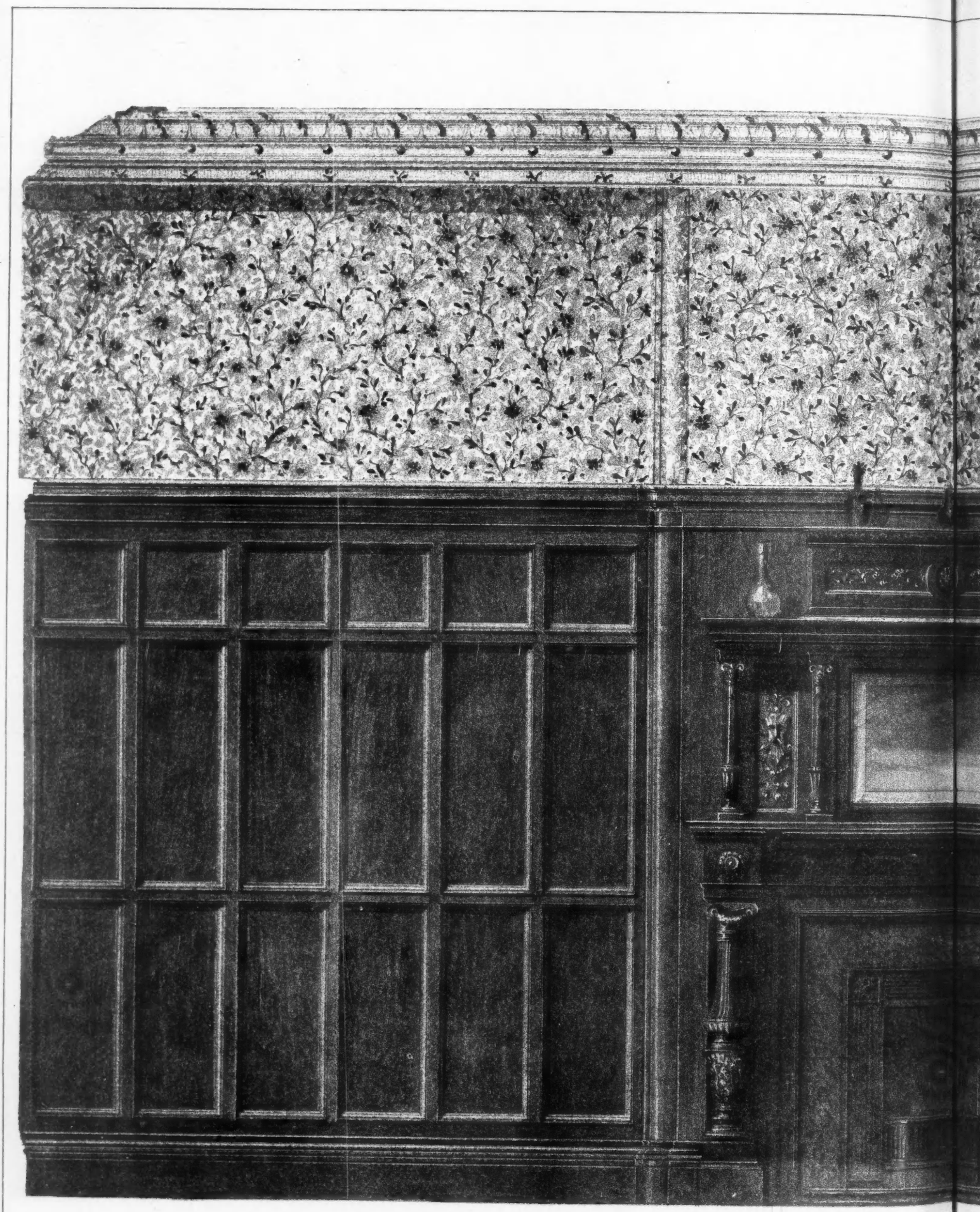
NEW BUILDINGS FOR THE METROPOLITAN LIFE ASSURANCE SOCIETY.

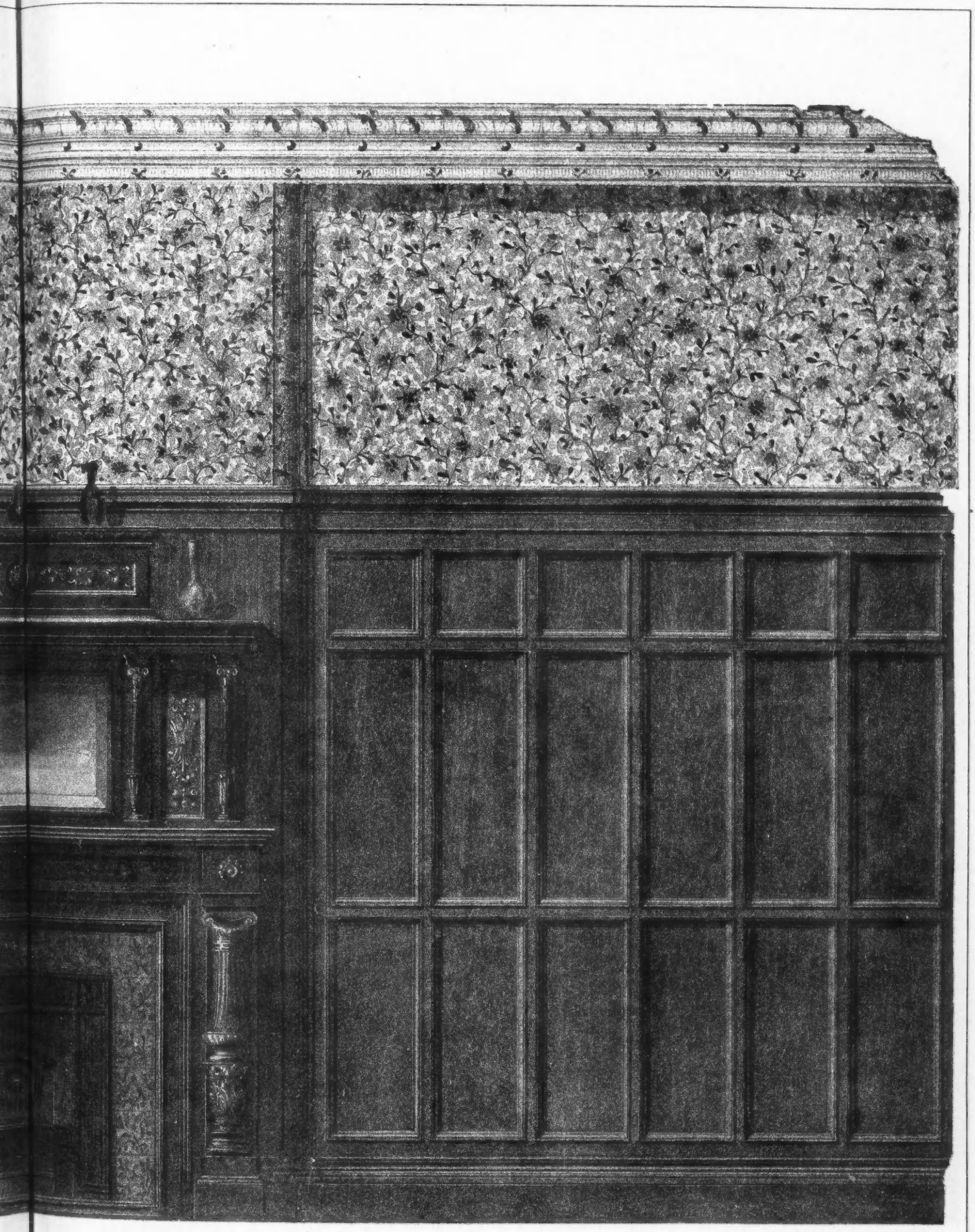
MR. ASTON WEBB, F.R.I.B.A., AND MR. E. INGRESS BELL, F.R.I.B.A., ARCHITECTS.

No. 1793 Royal Academy Exhibition, 1890.



BEDROOM IN A COUNTRY HOUS.—Pr

No. 1716 Royal Academy Exhibition. 1890.



"INK-PHOTO" SPRAGUE & Co. 22, MARTINS LANE, CANNON ST., LONDON, E.C.

HOUSE.—PROFESSOR AITCHISON, A.R.A.

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Chapel of Emmanuel College, Cambridge.

Mr. James Brooks
Architect
13 Bedford St.
Strand

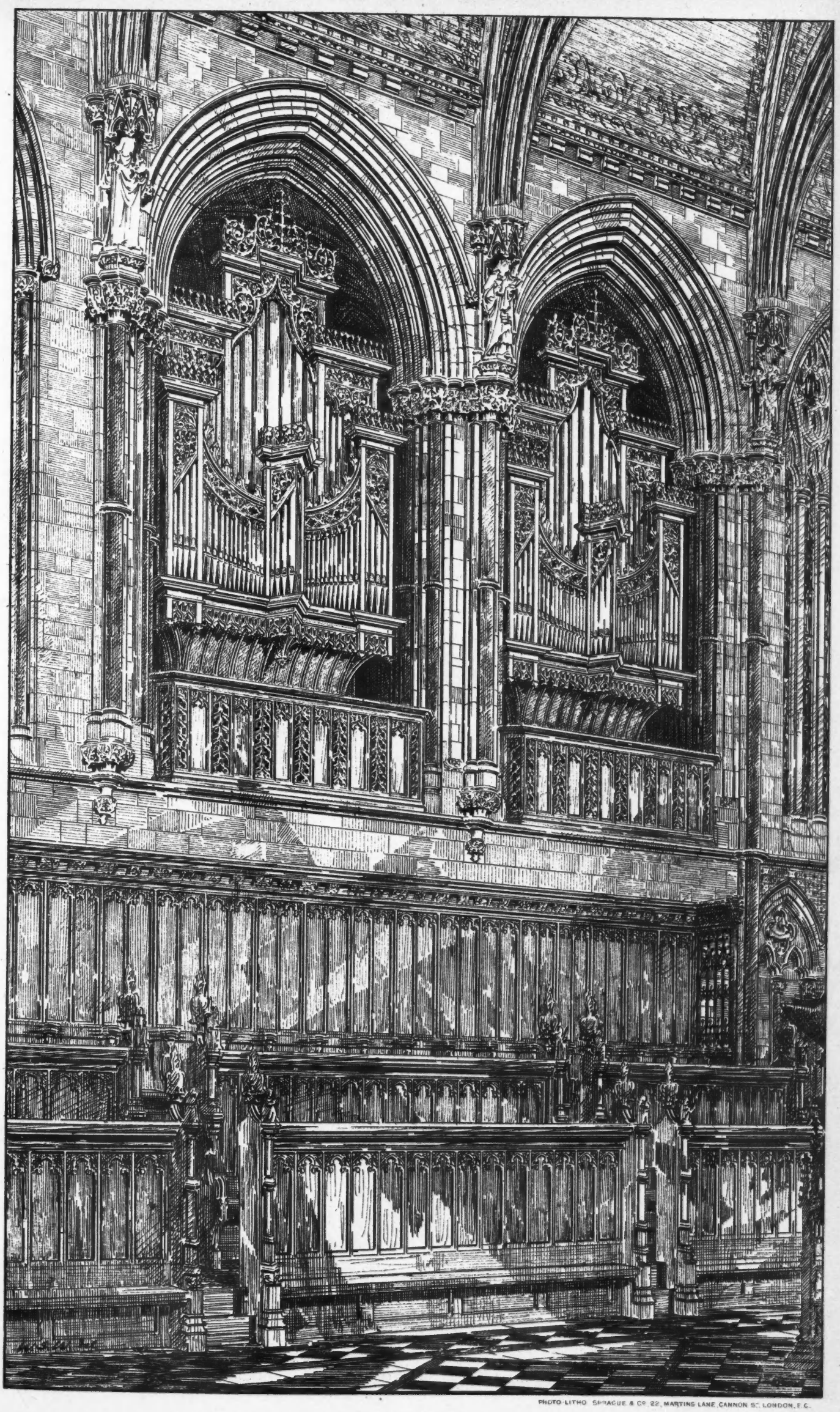

PHOTO-LITHO SPRAGUE & Co 22, MARTINS LANE CANNON ST. LONDON, E.C.

NEW ORGAN CASE, ST. JOHN'S COLLEGE CHAPEL, CAMBRIDGE.

MR. J. OLDRID SCOTT, F.R.I.B.A., ARCHITECT.

No. 1738 Royal Academy Exhibition, 1890.